SOAP

Volume XXV Number 3 March 1949

SANITARY CHEMICALS

CONTENTS	
Editorials	35
Powdered Soap Products (Part I)	37
Soaps for the Laundry	41
Diphase Metal Cleaners (Part II) By Foster Dee Snell and Irving Reich	45
Webb's City Soap Department	47
New Products, New Packages	48
Industrial Use of Synthetic Detergents	-77
Expanding Rationale of Chemical Disinfection By E. G. Klarmann	122
Crack Fillers By Robert A. Stetson	127
Moth-Proofing. By Milton A. Lesser	133
Application of Quaternaries to the Laundry Field	139
Jenitors Supply House History	145
Bids and Awards	63
Row Material Markets	65
New Trademarks	67
Production Clinic	83
Soap Plant Observer	89
Products and Processes	93
New Patents	95
Sanitary Products Section	99
Technical Briefs	147
Classified Advertising.	175
Advertisers' Index	179

FRANK J. REILLY, Editor

Associate Editors ELEONORE KANAR JOHN VOLLMUTH

Business Manager
THOMAS MORGAN

Published Monthly By
MAC NAIR-DORLAND COMPANY

Ira P. MacNair, Pres. Grant A. Dorland, V. Pres. and Treas.

Publication Office 28 Renne Ave., Pittsfield, Mass.

Editorial and Business Office 254 W. 31 St., New York 1, N. Y.



Subscription rate, \$4.00 per year. Foreign, including Canadian, \$5.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Entered as second-class matter at the Post Office, Pittsfield, Mass., under the act of March 3, 1879.



Since our recent return to selling your waxes

Dear Al:

under our own private brand labels, we have learned

the real value of repeat sales.

Once we have a customer sold, he stays sold and

our salesmen can spend their time looking for new business instead of chasing customers for reorders. Our

order. More important, we are giving them the all-

around top-quality waxes they demand.

WITH

Repeat Sales

Your salesmen will find that Candy's all-around top quality soon creates its own demand. Even when a customer does slip away to try out less expensive waxes, he either returns a his own accord or is easily sold again.

The way to create repeat sales is to sell all-around top-quality floor waxes-become known for handling a line of floor waxes that are of the highest quality.

Jobbers who want their private brand waxe on the repeat sales basis will do well to brand one or all of Candy's line-Candy's Supreme, Candy's Deluxe or Bright Beauty. One of these three is top-quality to all of your customers-your strongest bid for profitable repeat sales.

FREEDOM FROM FACTORY COMPETITION

We do not compete with our jobbers for consumer sales. We sell anh to distributors, except for experimental Chicago accounts essential to research.

customers reorder without having to be resold on each

Manufacturers of prepared paste wax, spirit liquid propored waxes, powdered donce floor wax-cream

AS THE DITOR SEES IT

ITH tallow around eight cents,but we suspect preparing to move upward at this writing,-and bulk chip soap a few cents higher than this, the lowest in a long, long time,-with fat and oil controls off,-with considerable price cutting in soap specialties and potash soaps, some of which has taken on the appearance of a real dog-fight,-all this gives the soap industry a prewar look like it hasn't had since 1939 or earlier. In some directions, competition between soapers has become unusually keen. We note a wider use of the well-known term, "S.O.B.," in referring to competitors, probably as a result of the added popularity, if such be needed, given this expressive phrase not so long ago by the President.

The nub of the present soap market, we believe, is the possible effect of the removal of fat and oil controls. We shall see if our fats and oils flow out of the country like water to the higher-priced markets of Europe, as was freely predicted some time back if and when controls were removed. As for tallow at eight cents,—and we feel that this is low and may be well above this figure as this is read,—the belief is held in some quarters that the price went down too rapidly to remain at this level.

Based on comparative purchasing power of the dollar today and ten years ago, the relative market for tallow would be under five cents, not too high even for 1935-38. Accordingly, the eight-cent level appears attractive in the current market. Coconut oil is reported scarce, in contrast to tallow on the American market, as are olive foots and one or two other oils. Over the next ninety days, while world oil and fat markets adjust themselves to the new and novel experience of free trading, freak developments in stocks and prices will not be unexpected. But the belief is held that by July first—adjustments will have run their course and more stable conditions will ensue. In the

meantime, much will hinge on the extent and character of developments in soap demand.

IEWING the political situation in Washington over the past month,—industry is knee-deep in national politics today whether it wants to be or not,—we have a feeling that the outlook may not be quite as bad as it appeared a couple of months ago. Members of Congress of both parties are showing an inclination not to swallow the quasi-socialistic program proposed for their legislative diet. In fact, opposition has become more blunt and outspoken.

Obviously scared stiff by the legislative proposals of the administration back in January, some of our industrial leaders are now, noting that they are not without support in Washington, beginning to find their tongues. A few have had the temerity to speak out. According to one of our economic brains, ". . . some of the people who should know what makes our economic system tick, have taken off their kid gloves." Maybe so, but thus far, they have not been too numerous. Mostly, as far as we can see, our business leaders as a whole have had their heads buried in the sand. Or to put it more aptly, perhaps, are peering silently and unseen through a slit in the curtain watching to see which way the congressional cat will jump.

But, nevertheless, opposition to the economically unsound tax program, to basically faulty labor legislation, and to a general program of beat-the-brains-out-of-business is beginning to crystallize. Soon, if hopes are realized, others of our supposed industrial leaders will pick themselves from off the canvas where for two months they have lain prostrate and vocally inert, and speak out. Now is the time to spike all this economic boondoggling before it gets a chance to wreck American economy on the same rocks which wrecked that of Europe.

round

try

ns of

ell

me

waxes

's

of

eauty.

PPOSITION by the soap industry to increasing minimum wages to seventy cents or above by amendment to the Walsh-Healey Act stems more from technicalities than from a desire not to pay such a wage rate in plants supplying government needs. As a matter of fact, common labor in the soap industry is being paid an average well above this new proposed minimum. But, this higher figure might well involve implications of far greater significance at a later date than a mere boost in basic wage rates.

At Washington hearings earlier this month, industry spokesmen opposed the proposed definition of the soap industry since it did not include synthetic glycerine and detergents. Inasmuch as competitive factors are important in setting wage rates and these synthetic products compete directly with soap industry products, the soap representatives held that they should be included within the scope of the soap industry definition. Soapers also hold that Bureau of Labor figures must be expanded to include many smaller soap firms not now included.

Practically doubling minimum wage rates even under Walsh-Healey limitations, might well be an invitation for similar increases along the line in all labor catagories, an implication which soapers as well as all manufacturers do not like. After public hearings on April 27 in Washington where a further presentation of the soap industry's view will be made, soapers should have a much clearer picture of the entire situation.

RECENT spot check to find out what retailers know about synthetic detergents revealed to our representative that they know even less than we had suspected. Not only are they without knowledge of these products, but they seem to display a frank hostility to them, as well as to soap products in general. Profits too small. Interesting is this observation even though it is not news. Soapers have not had many illusions about the retailer's love for them and their products. But, like some other manufacturers, they appear to assume that the dealer is an unimaginative lug anyway, so why get excited about him. More about this and some interesting comments of our reporter next month.

HEN we read the results and "interpretations" of some of these market surveys which have become as common as fleas on a yellow dog of late, we are invariably reminded of the old bromide. "figures don't lie, but liars do figure." If we may judge by some of the figures we have seen prominently displayed in the fancy-dan advertising magazines lately, and the "interpretations" placed upon the figures, we must believe that there is a direct, important, and causative relationship between the vodka output of Soviet Russia and monthly toilet soap sales in Austin, Texas, or between scouring powder use by the average housewife and the sex habits of the human male.

Apparently, the results of surveys can prove anything. You name it, and there seems always to be somebody who can come up with the figures to prove it. Of course, the manner in which these figures are "interpreted" is very, very important. No naive slob who adds twoand-two and gets four, we imagine, could ever amount to much in this survey "interpretation" business. If Mrs. Muddlepot states plainly that she does not use Big Blister Soap, that is not sufficiently conclusive. Mrs M becomes X in the equation, the soap is Y, how, when and why she does not use it is Z. She then becames a part of the larger, overall equation, which when worked out and "interpreted" in the light of the result being sought, proves definitely that she is wholly nuts, and that she has used Big Blister for seven years.

After the results of the "surveys" of last November, we should imagine that most sensible business men would be a bit wary of any survey. real or imaginary. But, such have apparently lost none of their popularity in allegedly analyzing markets,—in determining that exactly 6.2 cans of scouring powder per family were used in Iowa in 1947, or that "36 per cent of all the toilet soaps unwrapped in the U.S. in a single day" was opened by families reading a certain magazine. Some times we feel that this survey thing is being carried a little too far, that we are placing too much faith in it as a basis for spending a lot of money, and that much of it has degenerated into plain, unadulterated baloney.

Powdered Soap Products

By J. M. Vallance London Part I

N THE 1908 edition of their "Handbook of Soap Manufacture," W. H. Simmons and H. A. Appleton summarily dismissed soap powders in the following words: "Soap powders or dry soaps are powdered mixtures of soap, soda ash or soda crystals, and other chemicals, while polishing soaps often contain from 85 to 90 per cent siliceous matter, and can scarcely be termed soap."

While this was, and still is, a true enough general picture, it suffers from the characteristic defect of all portraits in miniature: it diminishes the importance of its subject. In point of fact, the production of soaps in powder form, as compared with that of soaps in bar and cake form, has markedly increased during the past fifteen years.

This assertion is amply confirmed by official U. K. statistics and probably, also, by similar statistics in the U.S. Good quality soap powders have obvious advantages over bar soaps for domestic laundry work and dish washing; while abrasive soap powders have always found wider applications for scouring and cleansing than the corresponding abrasive cake soaps. Technologically, spray-dried soap powders have attained ever-increasing importance, in view of their being the normal and simplest end-product of a number of modern soapmaking processes. Hence the attention that is now rightly paid to the constitution, production and marketing of soaps in powder form.

Powdered soap products may be further subdivided into the following three main groups: (a) high quality powdered soaps of some 88 to 98 per cent anhydrous soap content; (b) soap powders containing added alkaline soap builders; and (c) scouring powders, containing alkalies and selected abrasive materials. The third group, and more rarely the second, are occasionally found without soap. Similar ranges of products have likewise been devised, utilizing sulfated fatty alcohols and other solid synthetic detergents in place of soap. It is not proposed,

Below: The grinding operation in the production of powdered soap is an important one. Usually it is done by hammer mill or similar disintegrator.



however, to consider the latter under the present heading.

Powdered Soaps

POWDERED soaps are not to be confused with commercial soap powders. Whereas the latter contain a relatively low proportion of actual soap, which may run from about 10 to 35 per cent, the correctly styled "powdered soaps" are or should be exactly what the name implies-i.e. a practically pure soap in powder form. U. S. Federal Specifications provide for a "Powdered Soap for Laundry Use" and a "Powdered Toilet Soap for Dispensers." That the toilet soap is the finer product is evident from the comparative figures given below:

Anhydrous soap: not less than 89% (91%).

Matter volatile at 105°C not to exceed 6% (6%).

Sum of free alkali, total matter insoluble in alcohol, and sodium chloride, not to exceed 4% (2%).

Free alkali calcuated as NaOH not to exceed 0.2% (0.1%).

The British Pharmaceutical Codex refers to powdered curd soap (Sapo Animalis) and to hard soap (Sapo Durus) in powder form. Comparative figures restrict the matter volatile at 110°C. to five per cent in each case. These soaps also comply with similar limit tests for free alkali, free f.a., etc.

The field for powdered soaps is obviously a restricted one. In the U.K. there is only a small outlet for powdered soaps for laundry usepreference being given in this market to laundry chips, built soap powders and-more recently-synthetic detergents. Most of the high-grade powdered soaps find specialized applications in tooth paste and other dental cleaners; in shampoos, henna packs, cosmetics and toilet preparations, pharmaceutical and medicinal preparations. For use in carpet and upholstery cleaners, insecticides, disinfectants and various other preparations of a technical or industrial

character, it is more usual to employ powdered milling base. As powdered soaps are by no means easy or economical to produce, they do not find application as bases for ordinary soap powders or scouring powders.

The proper status of powdered soaps was admirably summarized by Dr. E. G. Thomssen in Soap & Sanitary Chemicals, December 1941: "Powdered soaps as they appear on the market today are indeed specialties, and represent the purest form of commercial soaps. They must be considered as specialities from the selection of the base fat or oil right through to the time they are packaged. To ignore the usual care needed in preparation of the soap base and to produce a powdered soap from ordinary dried toilet chip, as has been done on some occasions, is not to produce a product suitable or desirable for the various cosmetic and drug uses for which these products are indicated."

On the other hand, of course, it would be foolish to stipulate a pure soap product in cases where a powdered dried toilet chip would perform equally well.

The chief demand in the U.K. is for powdered soaps of the following types: (a) Castile or olive; sometimes a blend of olive and coconut; (b) coconut; and (c) blends of palm and tallow with coconut or palm kernel. Less frequently demanded are blends of coconut and palm kernel with peanut oil, oleic acid, etc.

"Know how" is unusually important in manufacturing pure powderd soaps, owing to the difficulty of efficiently drying and grinding them and to the ever-present danger of rancidification.

The making of powdered soaps is a branch of soap technology that calls for a high degree of special skill, which normally comes only through long experience. The first essential is high-grade raw materials, complying with minimum limits for unsaponifiable matter, traces of metals and nitrogenous materials: all this being essentially a safeguard against the development of rancidity, to which any finely divided pure soap is particularly subject. For

the same reason the finishing of the soap and its subsequent disintegration must be carefully controlled in all stages.

Assuming that a coconut tallow soap is required, of a pale creamy yellow color, some such kettle charge as the following may be decided upon:

Parts	by Weight
Coconut oil	500
Tallow, fine grade	400
Unbleached palm oil	40
Caustic soda (70°	
Tw.) approx.	510
Water	200

The exact amount of caustic will naturally be determined with reference to the saponification equivalents of the fats. The full-boiled process is used, with a sustained excess lye strength of 0.5 per cent or more, the water content of the kettle being kept at about one-third of the total charge. Some soap from a previous boil should be present, and the caustic lye should be fed slowly at first. At no time should there be a lack of excess caustic, giving rise to balling or bunching while too great an excess, causing a violent reaction and swelling. should be avoided. The grainingout process is effected in this case with extra caustic soda lye (about 32° Tw.) instead of salt or brine, owing to the solubility in weak brine of coconut oil soaps and the fact that the presence of sodium chloride in the finished soap is undesirable. After prolonged settling, the usual changes are made for maximum glycerin recovery, fitting and framing. Alternatively, the finished soap, fully saponified and answering to limit requirements for free alkali etc., may be run over a chilling roll and thence to a drying oven.

Some manufacturers are still prejudiced against using a continuous drying process for pure powdered soaps, but no fault can be found with this more modern method, provided that the speed and temperatures are carefully controlled and not allowed to go too high. For those who prefer framing, however, the next

Of three general types, powdered soaps, not to be confused with scouring powders, require considerable know-how to make.

step consists of stripping the frames, cutting the blocks into bars and storing. A properly matured bar gives better chips and evenly dried chips give a better powder, less subject to overheating and subsequent deterioration. It is absolutely essential to dry pure powdered soap base slowly, although the higher titre varieties are not quite so sensitive in this respect. From 12 to 24 hours is the usual period required for drying the chipped base; while the temperatures of the drying chamber are stepped up from an initial 35°C. to a maximum not exceeding 100 °C., depending upon the titre of the soap, size of chips and humidity conditions. Drying in spaghetti-form by passing the soap through a multiholed plodder plate is sometimes resorted to in order to facilitate prompter drying. In the case of chilling roll drying, speeds and steam coil temperatures are adjusted to give ribbons and chips of medium thickness: what is not wanted is an overdried surface and a moist interior. The finished base, ready for disintegrating into powder, is cooled and stored in a non-humid atmosphere-preferably in small bins or barrels.

Grinding of the dried, cooled chips is carried out with the aid of a hammer mill or similar type of disintegrator. High-speed attrition mills are perfectly satisfactory, provided always that they are efficiently air-cooled and not overfed. Heat developed during this stage of the process must be effectively and rapidly dispersed, as otherwise the texture, color and keeping properties of the powder may suffer. A sizeable air flow, coupled with a cyclone and a good dust collecting system, is essential. A vibrator cleaning device for the dust collector is desirable. The importance of the air intake must not be overlooked.

In factories subject to considerable variations in temperature and humidity, the installation of appropriate air conditioning plant may be advisable. Mushing of the soap in the mill or disintegrator is a sign either of underdried chips or, more probably, of an overheated mechanism. The remedy is obvious: lower work in g temperatures, reduced speeds, more air. A good powdered soap should normally pass a 150 or 200 mesh screen.

Regarding the spray drying of pure soap powders, Brian Reavell has stated (Soap, Perfumery, Cosmetics, November 1944) that the Kestner process "enables the production in powder form of any soap, liquid or mixture, whether it be high in fatty acid or not." The essential feature of the Kestner process is the use of a patented centrifugal atomizer in place of a pressure jet.

Packaging and storage of powdered soaps preferably entails the use of smaller size fibre drums, fibreboard cases etc. Dust-tight paper liners are desirable, to prevent sifting and leakage. Porosity of container and cool, dry storage conditions minimize the risk of deterioration and spontaneous combustion (the latter a more frequent trouble than may be supposed.) Metal containers are not suitable. Contamination with glue and other adhesives is to be avoided. The filling of the containers should take place only when the powdered soap is quite cool and only in dry atmospheric conditions.

Soap Powders

Soap powders and powdered soaps should not contain rosin, as the latter material gives a soft stickiness that interferes with both grinding and spraying processes. The normal constituents of soap powders—sometimes styled washing powders or "washers"—are soap, soda and

water. The sodium carbonate, if incorporated as soda ash, should take up the available water, with the formation of soda crystals. It is apparent from the simple addition reaction that sodium carbonate will actually take up nearly 1.7 times its weight of water. In certain old-style products the soap content frequently ran no higher than five per cent, but nowadays 10-15 per cent or more is quite customary. Published U. S. specifications run from 15 per cent anhydrous soap and 30 per cent alkaline salts to 23 per cent anhydrous soap (for borax soap powders) and not less than 91 per cent anhydrous soda soap (for powdered toilet soaps for dispenser use.) The latter is obviously equivalent to a ground, high-grade toilet chipsomething between pure powdered soaps and the best commercial soap powders.

The principal alkalis incorporated in soap powders, either in solution or by subsequent grinding in as powders are soda ash and soda crystals. These valuable and relatively inexpensive alkaline builders are occasionally reinforced by the specialized free rinsing and dispensing action on calcium soaps of the sodium phosphates. More commonly incorporated are the sodium silicates-especially the viscous silicates, including the familiar Na2O. 3SiO₂ and Na₂O · 3.3 SiO₂ grades. Sodium perborate and sodium percarbonate are used in the so-called "oxygenated washing powders," for their bleaching action, and are usually found in conjunction with sodium silicate, which exerts a noteworthy stabilizing effect on persalts. Of interest also are sodium metasilicate, sodium sesquisilicate and borax. A little sodium bicarbonate is sometimes used, chiefly to assist rapid, trouble-free grinding.

Ammonium carbonate is employed in ammonia soap powders (seven to 25 per cent) Sodium hexametaphosphate has frequently been written about as a soap powder constituent, but in actual fact it is too hygroscopic. Of similar utility as a lime soap dispersing agent is the much less hygroscopic tetrasodium pyrophosphate (two to 10 per

however, to consider the latter under the present heading.

Powdered Soaps

POWDERED soaps are not to be confused with commercial soap powders. Whereas the latter contain a relatively low proportion of actual soap, which may run from about 10 to 35 per cent, the correctly styled "powdered soaps" are or should be exactly what the name implies-i.e. a practically pure soap in powder form. U. S. Federal Specifications provide for a "Powdered Soap for Laundry Use" and a "Powdered Toilet Soap for Dispensers." That the toilet soap is the finer product is evident from the comparative figures given below:

Anhydrous soap: not less than 89% (91%).

Matter volatile at 105°C not to exceed 6% (6%).

Sum of free alkali, total matter insoluble in alcohol, and sodium chloride, not to exceed 4% (2%).

Free alkali calcuated as NaOH not to exceed 0.2% (0.1%).

The British Pharmaceutical Codex refers to powdered curd soap (Sapo Animalis) and to hard soap (Sapo Durus) in powder form. Comparative figures restrict the matter volatile at 110 °C. to five per cent in each case. These soaps also comply with similar limit tests for free alkali, free f.a., etc.

The field for powdered soaps is obviously a restricted one. In the U.K. there is only a small outlet for powdered soaps for laundry usepreference being given in this market to laundry chips, built soap powders and-more recently-synthetic detergents. Most of the high-grade powdered soaps find specialized applications in tooth paste and other dental cleaners; in shampoos, henna packs, cosmetics and toilet preparations, pharmaceutical and medicinal preparations. For use in carpet and upholstery cleaners, insecticides, disinfectants and various other preparations of a technical or industrial

character, it is more usual to employ powdered milling base. As powdered soaps are by no means easy or economical to produce, they do not find application as bases for ordinary soap powders or scouring powders.

The proper status of powdered soaps was admirably summarized by Dr. E. G. Thomssen in Soap & Sanitary Chemicals, December 1941: "Powdered soaps as they appear on the market today are indeed specialties, and represent the purest form of commercial soaps. They must be considered as specialities from the selection of the base fat or oil right through to the time they are packaged. To ignore the usual care needed in preparation of the soap base and to produce a powdered soap from ordinary dried toilet chip, as has been done on some occasions, is not to produce a product suitable or desirable for the various cosmetic and drug uses for which these products are indicated."

On the other hand, of course, it would be foolish to stipulate a pure soap product in cases where a powdered dried toilet chip would perform equally well.

The chief demand in the U.K. is for powdered soaps of the following types: (a) Castile or olive; sometimes a blend of olive and coconut; (b) coconut; and (c) blends of palm and tallow with coconut or palm kernel. Less frequently demanded are blends of coconut and palm kernel with peanut oil, oleic acid, etc.

"Know how" is unusually important in manufacturing pure powderd soaps, owing to the difficulty of efficiently drying and grinding them and to the ever-present danger of rancidification.

The making of powdered soaps is a branch of soap technology that calls for a high degree of special skill, which normally comes only through long experience. The first essential is high-grade raw materials, complying with minimum limits for unsaponifiable matter, traces of metals and nitrogenous materials: all this being essentially a safeguard against the development of rancidity, to which any finely divided pure soap is particularly subject. For

the same reason the finishing of the soap and its subsequent disintegration must be carefully controlled in all stages.

Assuming that a coconut tallow soap is required, of a pale creamy yellow color, some such kettle charge as the following may be decided upon:

	Parts by Weight
Coconut oil	500
Tallow, fine grade	400
Unbleached palm	oil 40
Caustic soda (70°	
Tw.) approx.	510
Water	200

The exact amount of caustic will naturally be determined with reference to the saponification equivalents of the fats. The full-boiled process is used, with a sustained excess lye strength of 0.5 per cent or more, the water content of the kettle being kept at about one-third of the total charge. Some soap from a previous boil should be present, and the caustic lye should be fed slowly at first. At no time should there be a lack of excess caustic, giving rise to balling or bunching -while too great an excess, causing a violent reaction and swelling, should be avoided. The grainingout process is effected in this case with extra caustic soda lye (about 32° Tw.) instead of salt or brine, owing to the solubility in weak brine of coconut oil soaps and the fact that the presence of sodium chloride in the finished soap is undesirable. After prolonged settling, the usual changes are made for maximum glycerin recovery, fitting and framing. Alternatively, the finished soap, fully saponified and answering to limit requirements for free alkali etc., may be run over a chilling roll and thence to a drying

Some manufacturers are still prejudiced against using a continuous drying process for pure powdered soaps, but no fault can be found with this more modern method, provided that the speed and temperatures are carefully controlled and not allowed to go too high. For those who prefer framing, however, the next

Of three general types, powdered soaps, not to be confused with scouring powders, require considerable know-how to make.

step consists of stripping the frames, cutting the blocks into bars and storing. A properly matured bar gives better chips and evenly dried chips give a better powder, less subject to overheating and subsequent deterioration. It is absolutely essential to dry pure powdered soap base slowly, although the higher titre varieties are not quite so sensitive in this respect. From 12 to 24 hours is the usual period required for drying the chipped base; while the temperatures of the drying chamber are stepped up from an initial 35°C. to a maximum not exceeding 100 °C., depending upon the titre of the soap, size of chips and humidity conditions. Drying in spaghetti-form by passing the soap through a multiholed plodder plate is sometimes resorted to in order to facilitate prompter drying. In the case of chilling roll drying, speeds and steam coil temperatures are adjusted to give ribbons and chips of medium thickness: what is not wanted is an overdried surface and a moist interior. The finished base, ready for disintegrating into powder, is cooled and stored in a non-humid atmosphere-preferably in small bins or barrels.

Grinding of the dried, cooled chips is carried out with the aid of a hammer mill or similar type of disintegrator. High-speed attrition mills are perfectly satisfactory, provided always that they are efficiently air-cooled and not overfed. Heat developed during this stage of the process must be effectively and rapidly dispersed, as otherwise the texture, color and keeping properties of the powder may suffer. A sizeable air flow, coupled with a cyclone and a good dust collecting system, is essential. A vibrator cleaning device for the dust collector is desirable. The importance of the air intake must not be overlooked.

In factories subject to considerable variations in temperature and humidity, the installation of appropriate air conditioning plant may be advisable. Mushing of the soap in the mill or disintegrator is a sign either of underdried chips or, more probably, of an overheated mechanism. The remedy is obvious: lower work in g temperatures, reduced speeds, more air. A good powdered soap should normally pass a 150 or 200 mesh screen.

Regarding the spray drying of pure soap powders, Brian Reavell has stated (Soap, Perfumery, Cosmetics, November 1944) that the Kestner process "enables the production in powder form of any soap, liquid or mixture, whether it be high in fatty acid or not." The essential feature of the Kestner process is the use of a patented centrifugal atomizer in place of a pressure jet.

Packaging and storage of powdered soaps preferably entails the use of smaller size fibre drums, fibreboard cases etc. Dust-tight paper liners are desirable, to prevent sifting and leakage. Porosity of container and cool, dry storage conditions minimize the risk of deterioration and spontaneous combustion (the latter a more frequent trouble than may be supposed.) Metal containers are not suitable. Contamination with glue and other adhesives is to be avoided. The filling of the containers should take place only when the powdered soap is quite cool and only in dry atmospheric conditions.

Soap Powders

Soap powders and powdered soaps should not contain rosin, as the latter material gives a soft stickiness that interferes with both grinding and spraying processes. The normal constituents of soap powders—sometimes styled washing powders or "washers"—are soap, soda and

water. The sodium carbonate, if incorporated as soda ash, should take up the available water, with the formation of soda crystals. It is apparent from the simple addition reaction that sodium carbonate will actually take up nearly 1.7 times its weight of water. In certain old-style products the soap content frequently ran no higher than five per cent, but nowadays 10-15 per cent or more is quite customary. Published U. S. specifications run from 15 per cent anhydrous soap and 30 per cent alkaline salts to 23 per cent anhydrous soap (for borax soap powders) and not less than 91 per cent anhydrous soda soap (for powdered toilet soaps for dispenser use.) The latter is obviously equivalent to a ground, high-grade toilet chipsomething between pure powdered soaps and the best commercial soap powders.

The principal alkalis incorporated in soap powders, either in solution or by subsequent grinding in as powders are soda ash and soda crystals. These valuable and relatively inexpensive alkaline builders are occasionally reinforced by the specialized free rinsing and dispensing action on calcium soaps of the sodium phosphates. More commonly incorporated are the sodium silicates-especially the viscous silicates, including the familiar Na2O. 3SiO₂ and Na₂O · 3.3 SiO₃ grades. Sodium perborate and sodium percarbonate are used in the so-called "oxygenated washing powders," for their bleaching action, and are usually found in conjunction with sodium silicate, which exerts a noteworthy stabilizing effect on persalts. Of interest also are sodium metasilicate, sodium sesquisilicate and borax. A little sodium bicarbonate is sometimes used, chiefly to assist rapid, trouble-free grinding.

Ammonium carbonate is employed in ammonia soap powders (seven to 25 per cent) Sodium hexametaphosphate has frequently been written about as a soap powder constituent, but in actual fact it is too hygroscopic. Of similar utility as a lime soap dispersing agent is the much less hygroscopic tetrasodium pyrophosphate (two to 10 per

cent.) The latter goes well with that excellent, all-round detergent and rinsing agent, trisodium phosphate.

Sodium sulphate is not normally used nowadays in soap powders, nor is it a desirable constituent. Traces of free caustic soda have been found: this, too, is an objectionable feature—especially of powders for domestic use.

Insoluble materials such as tale and diatomaceous earth, and colloid-forming materials such as bentonite and cellulose ethers, are specifically ruled out of consideration by most existing specifications. While some of them find limited application in soap powders, they are more properly applicable to abrasive cleansers. The presence of residual insoluble material in soap powders is not desirable.

Coloring matters include ultramarine and other soap colors; also good quality unbleached palm oil for its creamy effect, when used in low proportions. While a yellow shade imparts a distinctly soapy appearance, it is certainly not desirable as a feature of washed white garments. Grey shades caused by inefficient detergent action or reprecipitation of dirt are even more objectionable. There is also a school of thought that objects to silicated soap powders, because of the patchy effect given by uneven deposits of silicic acid after several washings.

Most soap powders are unperfumed, but a good inexpensive but stable soap perfume (stable also to free alkali) may well be regarded as a potential sales-winner.

The soap base used in soap powders may vary from a conventional coconut/tallow or palm/palm kernel charge to bone fats, lower grade greases, cottonseed oil and foots, split fatty acids, etc. Low grade fats and oils are frequently and conveniently worked off in soap powders containing a considerable proportion of alkaline fillers.

The laundry market for low soap content powders has suffered a marked decline in recent years. Although this is partly due to the rise of synthetic detergents, it is also attributable to scientific research into

the mechanism of the washing process and the fact that pre-treatment with water-softeners or simple alkalis is often more satisfactory than the use of combined alkali and soap mixtures. Under certain conditions the potential water-softening action of soap powder mixtures is virtually wasted, owing to the greater speed of reaction between calcium salts and soap than between calcium salts and alkalis. These considerations do not yet appear, however, to have materially affected the domestic market in the U.K., although Thomssen & Kemp ("Modern Soap Making") have noted such a decline in the U.S.

A good soap powder should be reasonably uniform in particle size and shape, and should be finely divided, in order to ensure ready solubility. Unless the particles are fairly uniform, there will be a distinct tendency for "sorting" and caking to occur inside the cartons.

Most Bases Full-Boiled

Most soap bases for soap powders are made by the full-boiled process. A good quality kettle charge might consist of 25 per cent coconut or palm kernel oil, with 75 per cent tallow, best bone grease or bleached palm oil-saponified with 70° Tw. (37.4° Be) caustic soda lve. Cheaper fat charges, giving a sufficiently hard and reasonably well lathering soap, may be substituted as desired. The soap is sometimes cleansed in the curd state, but it is definitely preferable to finish off with a very coarse fit and nigre weak in fatty acids. Thereafter, the soap is mixed with the alkalis or alkaline solutions and either dried and ground or sprayed and cooled.

Among smaller soapmakers in the U.K., a semi-boiled soap is sometimes employed as a base for soap powder. In such cases fatty acids are best used in the fat charge, owing to the fact that the hygroscopic nature of the glycerin otherwise produced is likely to cause trouble in the finished product. One method of producin g soap powder in this fashion calls for the saponification of the fatty acids, followed by the

addition of hot soda ash solution, accompanied by constant stirring:

Palm kernel fatty acids	200	lbs.
Palm oil, unbleached	15	44
Caustic soda lye		
(70° Tw.)	125	66
Soda ash	360	56
Water	400	66

THE heated oil and fatty acids A are added to the caustic lye with constant stirring. Excessive heat must be avoided, in order to minimize the risk of frothing over. The hot soda ash solution is added to the soap after saponification has taken place, constant stirring being maintained throughout the operation. Heat is cut off and the crutch kept turning, if the soap separates. When the mass thickens, it is run into frames or on to a concrete floor space. If desired, suitable waste cuttings may also be added, if first made up into a thick paste with water. Framed soap of this type is too hard to handle conveniently, unless it is dropped out of the frames before it has thoroughly cooled. The old-style concrete pit technique is preferable in this case, unless more modern means of cooling and drying are available.

The layer of soap paste in the concrete pit is usually three to five inches deep. It is broken up and turned over with a clean shovel, for two or three days after it has been run in. When dry it is rough ground and then reduced to powder, using a disintegrator with interchangeable grids to regulate particle size. Further additions of soda ash, trisodium phosphate, solid silicate, etc. may be made at the grinding stage. To the foregoing powder, for example, may be added:

Trisodium phosphate	60	lbs.
Tetrasodium pyrophosphate	30	66
Sodium metasilicate	20	66

—or, for that matter, any other combination suitable either for plain dilution or, as in this case, to improve the general cleansing action of the finished powder.

(To be continued)

SOAPS for the LAUNDRY

OAP, one of the oldest synthetic chemicals, is now a standard industrial product. Most of the bulk soap sold today is made to meet ASTM specifications, and is therefore a product of standard and uniform composition. On the surface, it would seem that with such an old and standard product, there would be nothing which a soap manufacturer could do to help the laundry industry. But if we look at the problem more closely, it is apparent that methods of using soap as a detergent have developed largely through cut and try methods and have not been properly evaluated in the light of the accumulated technical information now available

Before we discuss the problem at hand, it would be best to review the conditions under which soap is used by laundries. The laundry industry, while it is large in the aggregate, is made up of many small or medium-sized units. All of them would be small from the standpoint of most industrial processing plants, and throughout the industry, the washing machines used are relatively small.

with regard to surface active agents.

Machines have been made that would take up to 1,000 pounds of clothes, but they have not proved to be satisfactory, on the whole, and the machines ordinarily used do not process more than 300 to 600 pounds. Probably the most efficient size is generally in the range of 300 to 450 or 500 pounds.

The amount of soap used by the laundry industry, of course, varies with different types of work, and different amounts of soil present. If we take ordinary family work washed in soft water, we can generally expect a soap usage of roughly eight or 10 ounces per 100 pounds of load. We can go down to six, or less. We can go higher. But that

*Given before the 23rd annual convention of the Association of American Soap & Glycerine Producers', Hotel Commodore, New York, Jan. 29. By Ralph B. Smith

New Jersey Laundryman's Association

figure of 8 or 10 ounces is fairly representative at least on the Eastern Seaboard. Around Pittsburgh or other areas, consumption will go up, on account of soil differences.

With certain types of linen supply work which are heavily soiled, those figures are not usable, because the soil differences will increase soap consumption.

The soap used by laundries can be divided largely into two general classes: that required for the white cotton washing which calls for the use of high titer soap, generally the standard 42 degree titer, and that used for colored work, silk and wool washing, for which lower titered soaps are used. These are used in considerable quantities, but are not so important, in general, to the laundry industry, at least from the standpoint of control of washing methods, as is high titer soap, which is used for the bulk of laundry, and represents about 75 per cent of the total amount of soap used in laundering.

Soap may be added to the washwheels either in the dry or solution form. The amount added is generally regulated by the sudsing conditions which occur in the washwheel. Sudsing is an important



consideration from the standpoint of the manufacturer, because as the sudsing condition of a soap varies, its apparent usage or requirement in the laundry washwheel changes. As we will see later, there is evidence that this actually does occur.

Soaps originally used in the laundry industry were mixed with alkali and added to the wheel in the liquid form, but, in general, the tendency today is to use dry soaps because of less labor in handling. In many cases, it is actually easier to control the addition of dry soaps than to control the addition of liquid soap. This is not true in the new automatic washwheels which are coming on the market, which are equiped with built-in measuring equipment for the liquid soap.

The soap industry has made intermittent attempts to establish the basic data on which performance tests could be set up, but to date, these attempts have not produced any noteworthy results. However, a number of the individual soap companies are testing their own and competitive products by what amounts to performance tests.

A number of soap companies appear to believe that they can distinguish quite closely the use characteristics of soap by those tests. They have faith in them, but such performance tests have not spread to the specification of the finished material from a consumer standpoint.

If these soap companies would pool their information with regard to such test methods and make a real effort to develop them further. then it should be possible to set up adequate performance tests within a reasonable period of time. Performance tests on surface active agents can also develop outside the soap industry. Textile mills are interested in comparing different detergents and detergent processes; the manufacturers of home washing machines are interested in detergency from the standpoint of machine design and washing compounds, and the laundry industry is now taking an active interest in detergent problems.

Literally thousands of syn-

A representative of the laundry field makes a plea for standard test methods of evaluating laundry soap performance.

thetic detergents have been manufactured, and these have such diverse chemical charactertistics that only performance tests can establish their value and proper methods of use.

I might say, also, that a study of use characteristics would undoubtedly furnish a great deal of information which is not now available as to the best technique of using soap. We would probably get not only a better soap product, but we would, in the process of getting it, learn how to use it more efficiently and wisely.

It has been said that synthetics have been bought and sold on performance specifications, and that deliveries have actually been accepted or rejected on the basis of such tests. The basic information on which performance tests must be founded is slowly being developed, and when such testing comes into use, it should be of benefit to manufacturer and user alike.

The laundry industry and other users of detergents have developed washing methods to a great extent by empirical methods. There is a wealth of data in the literature on the physical chemistry of the surface active agents, but there is a distinct gap between such information and industrial use methods for soap and other detergents, at least, as far as laundries are concerned.

The experience of the laundry industry indicates certain conditions which will give the best results with soap. Soap cannot be used at pH values much below 8.5 because of the formation of acid soaps or fatty acids, but the best detergent range for cotton washing seems to lie between pH 11.0 and 12.0.

While the spread from 8.5 up to 11 is large, there is an intermediate range of from 8.5 up to about 10, in which, as far as we know, chemically, the acid soaps practically disappear. It would be

easy to understand changes in detergency characteristics occurring as the pH climbs from 8.5 up to approximately 10, but I don't believe that we have ever satisfactorily accounted for the change in detergency which apparently occurs when we go from 10 up to 11 or higher.

It may be, of course, due to the action of the alkali on fats present in the clothes, or other factors, but it certainly is a point that requires more investigation. It might enlighten us as to how and why we use soap.

We had one problem during the war which has disappeared to a very large extent. In the ordinary washing process we had to use flake soap. When we added it dry, we had a great deal of difficulty in measuring it. The apparent density or the relation of weight to volume, changed from the top of the barrel to the bottom of the barrel and from one barrel to another. This condition. of course, resulted in wasteful use of soap. With powdered soap, which we normally use, that problem is not particularly apparent, but it is something that should be considered.

The more nearly the weight-volume relationship holds from one barrel to another, and from one lot to another, the more nearly the laundry industry can control its soap usage, because, very largely, soap is added on a volume basis and not on a weight basis. The quantities added at any one time are so small, and they are added so frequently, that it is not practical, in most cases, to add soap on an actual weight basis.

We have one more problem along somewhat the same line, and that is the sale of built soaps under trade names. The problem of composition is of importance, but probably not in the way you think of it. It is that the composition should be kept constant over a period of

years, or else the user should be notified of any change which will, in any material respect, affect the use of the product.

In general, the soap industry has been very fair and ethical in this respect, but we do have records of built soaps sold under the same trade names changing very, very seriously in composition over a period of years. The laundry using these built soaps at the time of a change generally went through a period of misuse, because it was not apparent that the product had changed.

Both the old and new foundations may have been completely satisfactory but in all fairness to the laundry industry, I think that when it is expedient or desirable to make such changes in composition, the customer should be told about it.

Soap specifications, such as those promulgated by ASTM, relate very largely to the chemical composition of the finished product, and do not provide for any tests relative to the performance of the soap under various conditions of use. Such a method of soap specification may have been relatively satisfactory in the period before the war when the fats and oils used in soaps were more or less standard.

In the immediate past, however, it has been necessary to tap every available source of fat and then refine and blend the various raw materials to produce a usable soap stock. There is evidence that some of these soaps which meet ASTM specifications may not have the detergent efficiency of similar soaps manufactured before the war. Laundry operators believe that even with high titer soaps, they can detect differences in soap consumption requirements, sudsing efficiency, suds stability, and detergency between various brands of the same type of soap. Some of these apparent differences may be due to imagination on the part of the user, but such observations have been made frequently enough by different operators so that we must conclude that there is a certain basis of fact back of them.

To illustrate: not more than

a month or six weeks ago, I was down in the middle of New Jersey making some rather careful tests in a plant on soap consumption. The laundry owner was using about 12 or 15 ounces to the hundred pounds, a jump that had occurred with a change in the brand of soap he was using, although both before and after the switch he was using 42 titer soaps.

We were basing the rate of soap usage entirely on sudsing characteristics. It may be that we didn't need so much soap, but under ordinary rule-of-thumb methods in the laundry, the sudsing characteristics have been generally used to measure soap requirements. In this case, either the sudsing characteristic or something else changed, and the apparent soap requirement advanced sharply.

Some laundry owners have used sudsing temperatures in the 170 degree Fahrenheit range to increase detergency. At such temperatures there are easily observable differences between various brands of high titer soap with regard to suds stability. No information is available as to whether corresponding changes in detergency also occur. These changes are an interesting problem, and before the war one of the large soap companies was at the point of investigating them. The war interfered with the work and nothing further was done. The soap is not destroyed but there is a change in its physical characteristics in solution. Let me illustrate.

If we run a high temperature suds bath of 170 or 175 degrees, we notice a definite drop in suds level. However, in the next operation, if the temperature is reduced by putting in some cold water, and no more soap is added, the suds level will build up again, even though we have dumped part of the soap out of the wheel. That is, its actual concentration has decreased, so that there has been a physical change in the soap with respect to sudsing merely by a change in temperature. Whether there is a corresponding change in detergency either up or down, I don't know. Probably detergency increases with a temperature rise even though the soap sudsing decreases.

In the case of low titer soaps, there is no doubt that there are observable differences in color and odor, and probably in usage and detergent efficiency between the different brands.

We might discuss odor from two angles; first from the standpoint of the soap itself, because in many low titer soaps, there are definite differences in odor, some of them quite objectionable. Another factor is residual soap. By any ordinary rinsing process, it is completely impossible to remove all soap from a load of clothes. There is always some residual soap, and the tendency for soap to become rancid is of importance, particularly in the case of low temperature washing, in which soap residues tend to be higher, and the stability of the soap less.

Greater stability and reduced soap residue can and will be attained as better soap stocks become available, or (soapers know more about it than I do,) possibly by refining and treating of the stock before it is made into soap. But there is no doubt that there is a difference in stability of these soap residues with respect to odor. Some of them are quite stable and produce little or no odor when garments are stored. Some produce a noticeable odor.

It is obvious from the foregoing that chemical specification is not the complete answer to the control of soap quality. Something more is needed, and if we look to other industries, we see that more than one type of control is used to insure satisfactory use properties. The metal industries, and the steel industry in particular, use both chemical and physical tests. Glass is specified as to composition and physical properties. Special fabric treatments are rated by tests simulating conditions occurring in use. Many other such multiple test specifications could be cited, but it is apparent that the quality of many common products is, in part, controlled and specified in terms of use performance tests.

Alkali concentration must be controlled within reasonably close limits to give proper soil removal and to prevent excessive redeposition of suspended soil. Alkali control is on a quantity, or titration basis, as distinguished from a pH basis. In other words, certain alkali concentrations appear to influence soap usage characteristics. It is probable that additional information in this field would also aid us in the intelligent use of soap.

Certain alkalis appear to give good results in the washing process, while others seem to be difficult to use under the same conditions of temperature and concentration. The polyphosphates appear to act as soap extenders and possibly aid in the suspension of soil. Much more information is needed as to the effect of the various anions on the washing process.

There must be temperature ranges which are most suitable for soaps of different titer, but the information in this respect is not very specific. If we knew exactly the temperature ranges in which we should use any of the standard soaps that are now being produced, it is very likely that within reason we could modify our washing conditions to meet such optimum use requirements. Where this could not be done, possibly the optimum temperature requirements of the soaps which you produce could be changed.

In any event, a greater knowledge of the best temperature conditions of use for standard soaps would be of great help to us, and very likely would enable us to reduce soap consumption. I don't know what you think about it, but from our standpoint—and I think from your industry's standpoint—the efficient use of soap is, in the end, the most desirable objective.

The amount of suds present in a washwheel is very generally used as an index of effective soap concentration. However, the detergency resulting at any given suds level is probably influenced by variations in the amount and type of soil present in suspension. Very little is known with respect to this relationship.

This consideration is somewhat independent of the normal sudsing factor that I discussed earlier with relation to soap usage. There is some reason to believe that with high soil concentrations, where the sudsing properties are poor, we still may have very excellent detergency. This belief is based almost entirely on just ordinary observations, but I don't think the subject has ever been investigated from the standpoint of actual detergency.

Detergency appears to increase as the temperature of the washing process is raised, and this is probably true even in the temperature range above 160 degrees Fahrenheit, where tallow soaps rapidly lose their sudsing properties. More information on the rates of soil suspension and soil redeposition in this temperature range is needed.

The laundry washing process contains many variables, and when such a process is studied by more or less empirical methods, extraneous or even harmful factors may remain in the process. The proper sorting out of the factors involved requires a knowledge of the physical chemistry of surface active agents which the soap industry should be in the best position to supply.

Questions asked of Mr. Smith, after his discussion, follow:

Question: What degree of temperature is considered good washing temperature with a tallow soap?

Answer: The laundry industry operates generally up to 160 degrees. Only in special methods has it worked at temperatures above 160 degrees.

Question: A temperature of 172 degrees was mentioned a little while ago in a case of a man who had trouble with his soap.

Answer: In the U. S. we don't use temperatures that high very often. The English have used what they call the "English boil," in which steam is admitted to the wheel on about the third operation. I have done some work with a modified English boil in the U. S. It has a very high detergent value. You can get out certain types of dirt that are difficult to remove under ordinary sudsing conditions.

There is another factor I did not mention in regard to temperature. It concerns a change in the general temperature of the white work washing formula. About 25 or 30 years ago, the laundry used relatively low temperatures to start a washing process, later building them up with steam. Laundries had to use liquid soap, because the temperatures were so low that they could never have put dry soap into solution in a wheel.

Gradually, initial temperatures were raised, and today, even under ordinary conditions, initial temperatures of 100 to 120 degrees Fahrenheit are common. However, about 12 or 15 years ago, attempts were made to start with a straight hot water, initial wheel temperature of 140 to 160 degrees.

With the use of high temperature breaks, it is relatively easy to get sudsing temperatures up in the range of 160 to 170 degrees. In that range, we can notice differences in the sudsing characteristics of supposedly standard 42-degree soaps. Apparently one will suds better than the other. Whether those sudsing characteristics mean anything with respect to detergency or not, I don't know. It is a subject that, as far as I know, has never been investigated.

Question: When you inject live steam into a wheel, what is the usual temperature: around 200?

Answer: No; the apparent temperature goes up, but you have quite a body of water in the wheel, and generally it is not practical to raise the actual temperature to over 170 or 180. I think 180 would be very difficult to get. The thermometer on the wheel may read higher, but if you turn your steam off and let the wheel turn a couple of minutes until you get internal equilibrium, your actual temperature will drop down to 170 or 180, although you thought you were getting a higher temperature when the steam was running in.

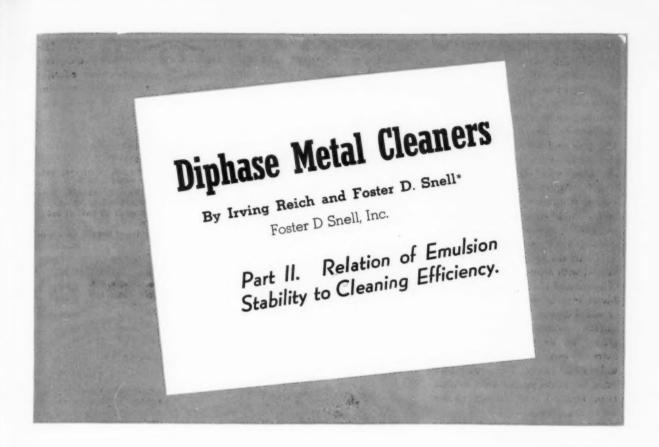
Question: What happens to the soap when you get up into those temperatures? Does it disintegrate?

Answer: Chemically, there is no change. Physically and apparently there is. The suds level just goes down. You lose your sudsing. You may have a perfectly good sudsing characteristic in the wheel before you start to put steam in, but by the time you turn it off, you have little or no suds left in the wheel.

The soap is not destroyed or broken down chemically, because on the following operation—as we frequently do—if we reduce that temperature to 140 or 150 degrees for bleaching, we find that the suds come right back up again, even without putting any soap in to the wheel. This improvement in sudsing occurs even though the actual soap concentration in the bath following the high temperature operation is lower than in the bath that preceded it.

We have some physical change in the soap due to temperature, but I am almost positive that we have no chemical change in the soap. I don't believe, honestly, that the drop in sudsing characteristics reflects a decrease in detergency. It is probably the other way around. What effect it has on soil suspension and soil redeposition charac-

(Turn to Page 143)



In this the second of two articles reporting work on diphase metal cleaners the relation of emulsion stability to cleaning efficiency is dealt with. An unstable or two-phase emulsion is found to be more efficient than a stable emulsion.

Of the many methods used for cleaning metals the following are important: treatment with liquid solvent, vapor degreasing, cleaning with alkali, emulsion cleaning, mechanical abrasion, electro-cleaning, acid pickling, and diphase cleaning.

A diphase cleaner has a number of advantages, and is characterized by the following:

- 1. The metal is simultaneously subjected to the action of an aqueous and a solvent phase. Neither phase must be completely emulsified in the other.
- The solvent phase is capable of dissolving oils and greases and preferentially wetting metal surfaces.
- The aqueous phase dissolves water-soluble soils and preferentially wets various mineral soils.

- 4. The solvent phase is of low viscosity.
- 5. The solvent phase shows some tendency to emulsify either in water or in a suitable aqueous solution which may be used for rinsing.

A solution of 11 per cent of triethanolamine oleate in 89 percent mineral spirits constitutes a diphase cleaner when mixed with water and properly applied. A stable emulsion, on the other hand, can be produced from the same ingredients by very vigorous agitation, by the addition of more soap, or by dissolving the oleic acid in the mineral spirits and the triethanolamine in water, then mixing the two phases. In any of these cases the efficiency of the cleaner is lost. Thus, contrary to widespread industrial practice, unstable rather than stable emulsions should be sought.

Experimental work has demonstrated that diphase cleaners are much more effective than stable emulsion cleaners in removing grease and soil from metal surfaces. Ex-

*Based on material published in Ind. Eng. Chem. 40, 2333-7 (1948)

amples of formulations which can be either a stable emulsion or a diphase cleaner are the following:

Formulation No. 1

Par	rts by Wt.
Mineral spirits	89
Oleic acid	7.2
Triethanolamine	3.8
Formulation No. 2	
Par	ts by Wt.
Mineral spirits	67
Pine oil	22.5
Oleic acid	5.4
Triethanolamine	3.6

Ethylene glycol mono-

instantly. The emulsion can be diluted with water without any visible oil separation.

The two methods of bringing the solvent and water together may be called the diphase and the stable emulsion techniques, respectively. The type and amount of emulsifier play an important role in determining whether a stable emulsion is formed. Agitation is also a factor; a diphase mixture can be converted into a stable emulsion by agitating and passing through such an efficient mixer as a colloid mill.

In use, a diphase cleaner is diluted with several times its volume of water and heated to about 60°C. Metal objects may be cleaned by repeated dipping, so that the metal surface contacts both the solvent phase and the aqueous phase. A more efficient method is to spray the soiled metal pieces. The spray intake must be at the proper level so that both aqueous and solvent phases are in the spray.

Interfacial contact angle and other measurements have demonstrated that the aqueous phase preferentially wets many mineral soils while the solvent phase preferentially wets metal. This effect is enhanced by the extensive hydrolysis of the triethanolamine oleate; most of the oleic acid remains in the solvent phase while most of the triethanolamine goes to the aqueous phase. Steel plates dipped in a diphase cleaner were wet by a continuous film of solvent, although when dipped in a stable emulsion of Formula No. 1, only a few droplets of emulsion remained on the plates. The tendency of the solvent phase of a diphase cleaner to wet greasy soil and metal preferentially, causes a concentration of the solvent at the metal surface, which results in cleansing action out of all proportion to the amount of solvent present.

Practical Tests

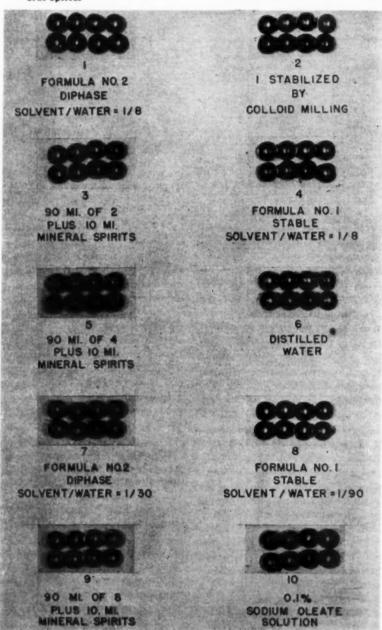
N FIGURE 1, the relative cleaning effects of stable emulsions and diphase cleaners are demonstrated. Steel washers were soiled by coating them with a paste of 12 grams of umber plus 11 grams of oil. Eight washers were placed in a 100-ml.

Nessler tube along with 100 ml. of the solution being tested, and the tube was rotated end over end through a vertical plane. After two minutes the rings were removed, rinsed with water, and photo-

graphed. Tests were at 55°C. The results in the figure show that diphase cleaners are much more effective than stable emulsions in removing soil of this sort. When the diphase (Turn to Page 98)

Figure 1. Effect of Free Unemulsified Solvent in Promoting Soil Removal from Steel Washers.

- Formula No. 2, diphase, solvent-water ratio I to 8
- I stabilized by colloid milling 90 ml. of 2 plus 10 ml. of min-eral spirits
- Formula No. 1, stable solvent-water ratio 1 to 8
- 90 ml. of 4 plus 10 ml. of mineral spirits
- Distilled water
- Formula No. 2, diphase, solvent-water ratio I to 30
- Formula No. 1, stable, solvent-water ratio 1 to 90
- 90 ml. of 8 plus 10 ml. of min-eral spirits
- 0.1% of sedium eleate solution





For a small department (in terms of space) Webb's City does large volume. Note number of nationally advertised products.

BIG little Soap Department

ITH an annual retail sales attainment figure of roughly \$1,300 per square foot of floor space, the soap and related sanitary chemicals department of Webb's City department store, St. Petersburg, Fla., has pushed its way close to the top in its class in the retail field. Through its unorthodox, though sound merchandising efforts, the soap and chemical specialties department of this much publicized, 24 year old store, in a floor space of 10 by 30 feet did \$400,000 worth of business in 1947. For the year, under the management of Joseph Mr. Amaron, the department retailed about 18,000 cases of various Procter & Gamble soap and

synthetic detergent products; 17,000 cases of goods produced by Lever

J. E. WEBB, Founder-Owner



Brothers Co. and 8,000 cases of Colgate-Palmolive-Peet Co. merchandise. These impressive totals represent only a portion of the merchandise which passes over the counters of this ever-busy department.

Apparently operating on the theory that there is a close relationship in the housewife's consciousness between soap and insecticides, J. E. ("Doc") Webb, founder of the overgrown drug store bearing his name, has promoted the two groups of products jointly, thereby cornering about 75 per cent of the insecticide business done in the Tampa-St. Petersburg area. The 75 per cent

(Turn to Page 151)



For Father's Day, Shulton, Inc., New York, has devised a water-repellent, flexible plastic kit in deep red to carry 4½ ounces of "Old Spice" after shave lotion and 1 3/8 ounces of talcum in pottery-like bottles, plus a tube of either brushless or lather shave cream, to retail for \$1.95.

Below: "Du-Ev" liquid household degreaser in its latest package design. Product is made by Du-Ev Products Co., Brooklyn, and retails for 59 cents per pint, 98 a quart.



What's



Above: New magnetic gadget designed to save soap. Hand holds bar of soap into which has been inserted wire with ball on end. Steel ball hangs from wall bracket above which contains magnet. Product of Urey W. Edger, Louisville.

Right: New "Moth-master" plastic container to hold paradichlorobenzene. Made by Irwin-Willert Co., E. St. Louis, in two sizes to retail for \$1.49 and 59 cents for the junior version. American Cyanamid Co's "Beetle" plastic in several different pastel shades is used.



48

SQAP and SANITARY CHEMICALS

March, 1949

by E

new?

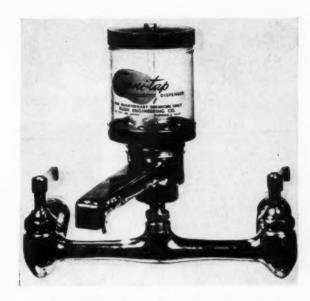


Above: Floor dispenser and counter card are part of nine-piece merchandising package for "Electra-Sol," new detergent for dishwashing machines and made by Economics Laboratory, St. Paul, Minn.

Right: Newest thing in automatic merchandise dispensing machines is a "Shop-O-Mat for toiletries made by Food-O-Mat Corp., New York. The unit is movable, being mounted on casters. It is gravity fed, having rear load system. Measures 36 inches wide x 34½ inches deep.



Above: New "Avon" creme shampoo with lanolin was brought out recently by Avon Products, Inc., New York. The new shampoo will retail for 59¢.



Above: "Sani-tap," new automatic germicide dispenser is now being marketed by Rush Engineering, Glendale, Calif. It fits on sink fixtures and meters out germicide in proportions to the rinse water. The metering function goes into operation when spout is over sterile sink rinse. Requires no external connections.





Get sales scents from Norda

Make your products smell good. They'll sell better. Success in your business, as you must have found out, is largely built on your customers' noses.

Common scents will bring you no new customers . . . common scents won't help keep your old ones. You need selling scents. Come to Norda.

Norda wants to help bring you more business. Have you a "problem child" product? Are there "bugs" in new products you're planning? Call our experienced Norda men in, to work out the money-making answers with you. Of course, there's no obligation. Get in touch with us soon!

Yours free . . . Samples of Norda odors, essences, fragrances, and newest price list. . . . Send today.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y.

CHICAGO . LOS ANGELES . ST. PAUL . MONTREAL . TORONTO . HAVANA . MEXICO CITY . LONDON . PARIS

TRADE NEWS

Fairbanks Names Officers

R. G. Fairbanks, president and general manager of Fairbanks Soap Co., Toronto, Canada, recently announced the appointment of W. N. Keefe as vice-president in charge of manufacturing and of W. J. De-Rocher as treasurer.

C-P-P Building in K.C.

Colgate-Palmolive-Peet Co., Jersey City, N. J., last month began construction of a plant to manufacture dental cream, shampoos, tooth powder, shave cream and other toiletries, in Kansas City, Mo. The plant is expected to be completed by the end of this year. It will employ about 200 more people than the 500 currently working at the C-P-P Kansas City plant now. The expansion is estimated to cost several million dollars, and is the second new project undertaken at Kansas City since the war. In 1947 a tower for the production of synthetic detergents was completed.

Canada Drops Fat Controls

Canada has removed export and import controls on animal, vegetable and marine oils and fats it was announced Feb. 22 by Trade Minister C. D. Howe. The announcement stated that the action follows a decision by the International Emergency Food Committee to remove international allocations on these items.

Geo. A. Sellmer Dies

George A. Sellmer, 67, one-time operator of Crystal Soap Co., Milwaukee, and later executive of Colgate-Palmolive-Peet Co., Jersey City, N. J., which firm took over Crystal, died in Montclair, N. J. Community Hospital, Feb. 1. He had been in the soap business for 40 years, prior to his retirement in 1947. Following the purchase of



Above: Roy W. Peet, secretary-manager of the Association of American Soap & Glycerine Producers, is now recovering at Clearwater, Fla., from a serious abdominal operation he underwent Feb. 14, at New England Baptist Hospital, Roxbury, Mass. He expects to be back on the job in New York shortly.

Crystal Soap Co., by Colgate-Palmolive-Peet Co., Mr. Sellmer went with the latter firm as office manager and assistant superintendent. With the merger of C-P-P and Crystal, he became head of the private products division of Colgate, with head-quarters in Jersey City. He is survived by his wife, a daughter, two sons, a sister and two brothers.

"Dial" Bows on Coast

"Dial" deodorant soap, a product of Armour Toiletries (Armour & Co., Chicago) was introduced in full-page advertising in Southern California newspapers and went on sale in drug and department stores there recently. The same copy theme was used as in other areas where "Dial" has been introduced.

Gourielli Appointments

Gourielli, Inc., New York, recently announced the appointment of Philip Libson as purchasing agent. At the same time it was announced that Eric deKolb had been named art director.

New Yardley Plant

Yardley of London, Inc., New York, recently bought 10½ acres of land in Clifton, N. J., as the site for a new, \$1,500,000 factory. Plans call for the construction of a one-story building which will provide 200,000 square feet of floor space. Work on the new plant is scheduled to start in June. Yardley also has a factory in Union City, N. J., where its line of soaps, from the English formula, and toiletries are made.

Ask Soap Investigation

The National Retail Grocers Secretaries Association, at a meeting in Chicago recently, urged a federal investigation of the merchandising practices of the major soap companies. These practices, a resolution of the association declared, "frequently compel the independent retailer to handle the products of such companies at a loss." The resolution requested an investigation by the Federal Trade Commission, the Department of Justice and Congress.

Schaad Heads Reading Chem.

Carl E. Schaad of Chemical Manufacturing & Distributing Co., Easton, was reelected president of Reading Chemical & Paper Supply Co., Reading, Pa., at a recent meeting of the board. Other Officers of the firm, which recently moved to Reading from West Lawn, Pa., include: Esther Schaad, vice-president; Louis C. Peterson, treasurer and general manager and Emilie Schaad Peterson, secretary. The company, which recently made arrangements to sell the line of chemicals of J. T. Baker Co., Philipsburg, N.J., through Lehigh Valley Chemical Co., Allentown, Pa., will also distribute the "Target" products made by Chemical Manufacturing & Distributing Co.

Lewis, Elliott Named to Lever Bros. Board



RALPH P. LEWIS



JAMES M. ELLIOTT

Lever Brothers Co., Cambridge, Mass., recently announced the election of James M. Elliott and Ralph P. Lewis to the board of directors. Mr. Lewis is president of Harriet Hubbard Ayer, Inc., New York, and Mr. Elliott holds the same position with John F. Jelke Co., Chicago, both Lever subsidiaries. Mr. Lewis was named president of Harriet Hubbard Ayer in

July, 1947. Previously he had been associated with Elizabeth Arden Sales Corp., New York, first as general sales manager, later as vice-president in charge of sales.

Mr. Elliott has been with the Jelke company since 1941, when he joined as sales manager. A year later he was elected vice-president and general manager and in 1943 was named to the presidency.

Soap Sales Off

Sales of soaps by manufacturers declined during 1948, as compared with the previous year and were down in the fourth quarter of 1948, as against the same period in 1947 and the third quarter in 1948, according to figures released recently by the Association of American Soap & Glycerine Producers, Inc., New York. In 1948, a total of 2,491,380,974 pounds of soap were delivered worth \$578,578,074, as compared with 2,814,947,000 pounds valued at \$640,586,000 for 1947.

Liquid soap deliveries amounted to 3,301,148 gallons, worth \$4,138,044 in 1948, as against 3,109,000 gallons, having a value of \$3,944,000 in the previous year. In the fourth quarter of 1948, liquid soap sales reported by members of the AASGP were 918,148 gallons, as compared with 984,394 gallons for the third quarter and 636,000 gallons in the final 1947 quarter.

Other than liquid soap sales

by manufacturers for the fourth quarter of 1948 were reported by AASGP members as being 546,277,974 pounds, worth \$118,285,590, as compared with 655,883,734 pounds, valued at \$149,850,895 for the third quarter of 1948, and 797,078,000 pounds with a sales value of \$189,752,000 for the fourth quarter of 1947.

Synthetic detergent sales figures supplied by 17 manufacturers show that for the year 1948, 401,685,000 pounds were sold with a value of \$111,342,000.

Shippers Elect P & G Man

Howard E. Goodman, shipping supervisor of Procter & Gamble Manufacturing Co., was recently elected president of the Motor Freight and Industrial Transportation Club of Dallas, Tex.

Cottrell to Calgon

Charles E. Cottrell, formerly sales manager of the Moon-Shine Division, Hood Chemical Co., Pittsburgh, recently joined the sales staif of Calgon, Inc., Pittsburgh. He will work principally with wholesalers, chain and department store accounts in the sale of "Calgon" water conditioner and "Calgonite" compound for automatic dishwashers. Mr. Cottrell's appointment is part of the company's plan to expand its promotional activities in the household market.

With C-P-P 46 Yrs., Retires

Leon E. Martiny, New Orleans district manager for Colgate-Palmolive-Peet Co., Jersey City, N. J., retired early in February after 46 years with the company, the only one he was ever with. He joined the firm in 1902. Mr. Martiny's son, R. J. Martiny, who has been with Colgate-Palmolive-Peet Co., for the past 14 years, has been named to succeed him.

Forms Detergent Firm

Phoenix Chemical Co., Augusta, Ga., was organized recently for the manufacture of detergents and dispersing agents. The firm was organized by Phoenix Oil Co., and will occupy part of the new plant recently completed by Phoenix Oil. The company will distribute its products throughout the southeastern part of the U. S. to textile manufacturers and related industries.

Ups Shave Cream Prices

Price increases on its line of brushless and lather shaving creams were announced recently for the first time since their introduction 10 years ago by Gillette Safety Razor Co., Boston. The new price schedule calls for an advance of six cents on the giant brushless cream and four cents on the regular cream. Prices are fair traded.

New Lilac Odor

A new lilac fragrance, "Lilascent" was announced recently by Aromatic Products, Inc., New York. The new scent is described and uses for it listed in the recently issued January-February number of the company's house organ, "Labscents."

SOCI Medal to Snell

Foster Dee Snell, president of the New York chemical consulting



FOSTER DEE SNELL

firm bearing his name, recently was named to receive the Gold Medal for 1949 of the Society of Chemical Industry, London. The medal is awarded bi-annually by the Society's council to a person "who has attained eminence in applied chemistry." Dr. Snell is the second American to win the medal since it was first awarded in 1896. He will receive the medal at the Society's meeting in Manchester, England, July 13, 1949, at which time he will deliver an address on a phase of surface activity. For many years he was Honorary Secretary of the American Section of the Society of Chemical Industry and has been its chairman.

Issues Export Permits

The Government of Turkey currently is issuing export permits for toilet soap. In conjunction with this announcement, Government officials indicated that Turkish soap manufacturers are now free to import above-quota caustic soda, on condition that quantities imported correspond to the caustic soda content of the soap which is sold abroad.

Wm. L. Sweet Dies

William L. Sweet, 80, former president and chairman of the board of Rumford Chemical Works, Rumford, R. I., died at his home in Providence, Feb. 4. He retired about 10 years ago after 40 years in executive positions with the Rumford firm.

He was a director of the National Association of Manufacturers, the National Council of Chambers of Commerce and the Chamber of Commerce of the United States. At one time he was a director and president for several years of the American Grocery Specialty Manufacturers Association. He is survived by a son and two grandsons.

Lee to S. Africa

Alan Porter Lee, head of the New York engineering and consulting firm bearing his name, left Feb. 25 for a three weeks trip to Johannesburg and Capetown, S. Africa, where he will make a survey of vegetable oil mills and refineries.

Changes at Hooker

With the resignation of H. M. Hooker as chairman of the board of Hooker Electrochemical Co., Niagara Falls, N. Y., recently, the following other organizational changes were announced: R. L. Murray, vice-president in charge of development and research, is now executive vice-president: R.W. Hooker is now vice-president in charge of sales; J. H. Babcock, formerly manager of development and research, is now director in full charge of that department and R. E. Wilkin, eastern sales manager, is now general sales manager responsible for west coast as well as eastern sales

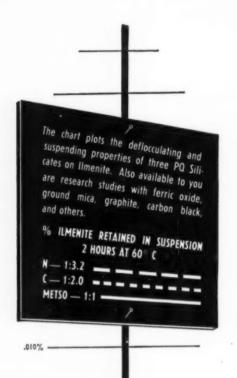
Sales Award to P & G

A plaque for distinguished sales achievement was awarded to Procter & Gamble Co., recently by the New England Sales Management Conference at a two-day meeting in Boston. T. J. Wood, vice-president in charge of sales for P & G accepted the award on behalf of the company. In receiving the plaque, Mr. Wood discussed the place of selling in the American economy. It is the responsibility of the salesman to keep the country's great productive capacity in operation, he said. In a reference to the conference theme, "Selling

when the going gets hard," Mr. Wood stated that "just because competition in the future probably will be more intense than that experienced for some years, for that reason more than ever we shall have to rely on the same fundamentals of salesmanship we have employed in the past."

He listed the qualities he looks for in a real salesman as, resourcefulness, imagination, determination, industriousness; a man of action with a cooperative spirit and a constructive, positive attitude.

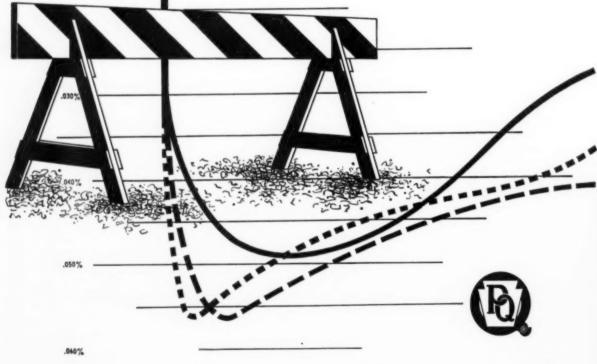




PQ SILICATES AT WORK

When PQ Silicates are in the detergent solution, you're sure they keep dirt stirred up. The suspending action of PQ Silicates decreases the rate and amount of sedimentation of dispersed solid particles. Here is outstanding performance in dispersing tiny particles of solid dirt into a cloud which does not settle or re-agglomerate. In the suspended condition the dirt is easily flushed or rinsed away. Write PQ for complete information on silicates as detergents and soap builders.

PHILADELPHIA QUARTZ COMPANY 1152 Public Ledger Building Philadelphia 6, Pa.



0.02

0.8 % SILICATE - ANHYDROUS BASIS 8.2

Morrisch Joins Firmenich

Edward P. Morrisch has become associated with Firmenich &



EDWARD P. MORRISCH

Co., New York, as technical director of the perfume division, according to an announcment by Charles C. Bryan, resident partner. Mr. Morrisch was formerly associated with Jacqueline Cochran. Prior to that he was also connected with the American Home Products, Parfum Corday, and Kathleen Mary Quinlan. During the war period, he was Chief of the Cosmetic Division of OPA. Mr. Morrisch succeeds Dr. Anthony Frascati, recently resigned, at Firmenich.

New Detergent Firm

Formation of American Aldehyde Corp., Buflalo, N. Y., to produce a rust remover, and detergents for industrial use, was announced recently. The corporation, an af-

filiate of Pharmaceutical Preparations, Inc., is capitalized at \$250,000. William Davey, vice-president of Pharmaceutical Preparations, is president of the new firm.

Glyco Moves to Natrium

Glyco Products Co., Brooklyn, recently announced that all of its Brooklyn manufacturing and research facilities have been transferred to the company's main plant at Natrium, W. Va.

Crane Traffic League Head

Donald W. Crane, rate supervisor for Colgate-Palmolive-Peet Co., Jersey City, N. J., was recently elected president of the New Jersey Industrial Traffic League. Among those serving on the executive committee are Frank P. Martino, traffic manager, Reilly Tar & Chemical Corp., Newark; Floyd T. Ridley, traffic manager of American Cyanamid Co., New York, and William J. Klevins, Merck & Co., Rahway.

Releases Violet Odor

P. R. Dreyer, Inc., New York, recently announced the release for general use by the trade of their Violet "Viocyclenes." They were formerly available only to a few of the firm's regular customers, according to the announcement.

Below: Photograph taken at the recent annual dinner of the BIMS of New York, which was held at the New York Athletic Club. Pete Forsman, BIMS Chairman, presided over the gathering of 225 members and guests.

Controllers Name Siddall

K. Y. Siddall, controller of Procter & Gamble Co., Cincinnati,



KELLY Y. SIDDALL

was recently appointed by the Controllers Institute of America to serve on the membership committee of the Controllership Foundation. Mr. Siddall is national president of the Institute. The Foundation, which is the research section of the Institute, conducts surveys and studies in the financial management field.

Mr. Siddall spoke at a recent monthly meeting of the New York City Council of the Institute on "Management Planning Through Forecasts."

Bush Becomes Givaudan

The corporate name of Burton T. Bush, Inc., manufacturing company of Givaudan-Delawanna, Inc., New York, was recently changed to The Givaudan Corp.





THE NAME TO WATCH IN CHEMICALS

D-40 DETERGENT GIVES FAST ACTION, QUICK PENETRATION, EASIER RINSING

There's plenty of power in the surface activity of D-40 Detergent. Whether you have hard water or soft, this remarkable product gives excellent performance in extremely low concentrations.

With D-40, new economies are now possible in many washing and cleaning operations. A leader among detergents, it is also highly effective as a wetting agent, foaming agent and surface tension depressant.

Quick solubility, shorter wetting times, exceptional stability, easier rinsing, are a few advantages of D-40 Detergent.

If you need detergents for compounding ... processing... or manufacturing... call the Oronite office nearest you.



A typical example of improved washing methods is the use of D-40 to loosen grease and food particles from dishes and silverware in dishwashing operations.

The high surface activity and grease emulsifying properties of D-40 quickly remove protein and other foods from soiled surfaces. This outstanding detergent works well with many sterilizing agents and helps eliminate the breeding grounds of harmful bacteria.

In controlled washing operations with hard or soft water and varying temperatures, D-40 will improve the wash at lower cost.

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA 30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK 600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

Study Sequestering Agents

A research project involving sequestering or chelating agents was



ARTHUR E. MARTELL

undertaken recently at Clark University, Worcester, Mass. The project is being supported in part by a grant of funds, chemicals and equipment by F. C. Bersworth, president of Bersworth Chemical Co., Framingham, Mass., producers of sequestering agents and chelating agents for industry. Four student chemists in the graduate department of chemistry are working on the project under the direction of Dr. Arthur E. Martell of the Clark faculty. The research projects involve the synthesis and study of a new series of chemical substances for altering the properties of metal solutions.

DCAT Hears Eberstadt

Ferdinand Eberstadt, chairman of the Committee on the National Security Organization of the Hoover Commission, was the guest speaker of the 23rd annual dinner of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, held Mar. 10, at the Waldorf-Astoria Hotel, New York. Over 2,000 leaders in the industry heard Mr. Eberstadt discuss "Our National Security Policies and Organization." A reception preceding the dinner was held in the Jade Room and Astor Gallery. Dinner was held in the Grand Ballroom.

A memorial tribute to the late Ralph E. Dorland of the New York Office of Dow Chemical Co., a former section chairman, was paid at the dinner.

Committee chairman serving under Robert B. Magnus, Magnus, Mabee & Reynard, Inc., New York, section chairman, included Lloyd I. Volckening of Ivers-Lee Co., section vice-chairman and head of the dinner arrangements committee; John P. Remensnyder, Heyden Chemical Co., head of the reception committee with Clark L. Rodgers of Owens-Illinois Glass Co. as vice-chairman; Carle M. Bigeiow of Calco Chemical Division of American Cyanamid Co. was honor guest committee chairman, assisted by Harold M. Altshul of Ketchum & Co.; Harold C. Green of L. Sonneborn Sons Co. and Charles M. Macauley of Prophy-lac-tic Brush Co. served as chairman and vice-chairman, respectively, of the publicity committee. Program committee chairman was Fred J. Stock of Charles Pfizer & Co.

CD & CA Elects Smith

The following officers and directors were elected for 1949 by the Chicago Drug and Chemical Association at a luncheon meeting at the Drake Hotel, recently: president, Irwin E. Smith, Victor Chemical Works; vice-president, Walter R. Nay, Mallinckrodt Chemical Works; secretary, William F. Otis, R. W. Greeff Co.; treasurer, Ralph A. Olson, S. B. Penick & Co.; directors, C. F. Brehmer, Pure Oil Co.; Vincent Farrar, Ace Carton Corp.; Gordon D. Sinclair, Harshaw Chemical Co.; Richard M. Ulrich, Owens-Illinois Glass Co., and Herbert R. Arnold, Galler Drug Co.; Gerald F. Pauley, Monsanto Chemical Co., retiring president, became a member, ex-offico of the board.

Below: Charles A. Myers, recently named vice-president of S. B. Penick & Co., New York. In his new post, Mr. Myers will act as managing director of the Penick essential oil division.



Williams Heads Drug Club

Victor E. Williams, Monsanto Chemical Co., was elected president



VICTOR E. WILLIAMS

of the Drug & Chemical Club of New York at its recent annual meeting. John P. Remensnyder, Heyden Chemical Corp., was chosen treasurer. Herbert Bye of M. W. Parsons Import and Plymouth Organic Labs., Inc. and William S. Auchincloss of Schnell Publishing Co. were elected to the board of governors. Mr. Williams is a past president of the Salesmen's Association of the American Chemical Industry, and former chairman of the Drug, Chemical & Allied Section, N. Y. Board of Trade.

Bush Reports on Trip

Progress on the development of a new absolute rose odor approaching that of the Bulgarian otto was reported by Burton T. Bush, Bush Aromatics, Inc., New York, on his return recently from a visit to Grasse, France. Similar progress in the improvement of an absolute jasmin was also reported by Mr. Bush, who said he could see no visible signs of the shifting of the essential oil capitol of the world from Grasse.

Houghton Family Open House

More than 800 employees and members of their families attended the recent family week Open House program of E. F. Houghton & Co., Philadelphia. The program featured three evenings of visitation at the company's modern office building.



stable
sequestering
agent
and water
softener

PERMA KLEER-40 is an aqueous solution
of the sodium salt of a polyaminocarboxylic acid. Since
it forms soluble, stable chelate complexes
with calcium, magnesium, iron, copper and other metal
ions, it serves to sequester these ions and render
them inactive in solution. PERMA KLEER-40
is the salt of a strong base and a weak acid and is,
therefore, strongly alkaline. In most cases it can be used
without adjusting the pH but, where a lower pH
is desired, it can be lowered by the use of organic or
mineral acids such as acetic or phosphoric
acid. PERMA KLEER-40 resists hydrolysis and,
unlike the polyphosphate type of sequestering
agents, can be boiled for long periods
of time without reducing its activity.

PERMA KLEER-40 keeps soap solutions permanently clear.

PERMA KLEER-40 improves sudsing, lathering and rinsing.

PERMA KLEER-40 protects 2,4-D solutions from hard water turbidity.

> ★ Write for complete technical information.

REFINED PRODUCTS CORPORATION

Manufacturing Chemists

624-634 SCHUYLER AVENUE . LYNDHURST, NEW JERSEY



Felton Celebrates 25 Years

Felton Chemical Co., Brooklyn, recently celebrated its 25th anniversary with a dinner dance held at the Hotel Bossert, Brooklyn. A silver plaque was presented to the officers of the company by the employees, and silver bowls were given to employees with the firm 20 years. Employees with the company 10 years or more were also presented with gifts. Speakers included Dr. Joseph Felton, president; Louis Gampert, vice-president, and Mrs. Sophie Felton, secretary and treasurer, who presented the awards.

FTC Toiletries Hearing

The need for toilet goods manufacturers to choose their own sales outlets was pointed out at a Federal Trade Commission hearing in Washington, D. C., recently by Robert P. Patterson, former Secretary of War, counsel for a number of toilet goods firms. The F.T.C. is attempting to set up trade practice rules for the industry. Pros and cons on the matter of outlawing "PM's"—the practice of paying salespeople to push a certain product—were also voiced at the meeting.

Columbia Advances Neubauer

Joseph A. Neubauer, since 1945 technical advisor, was recently named technical director for the Columbia Chemical Division of Pittsburgh Plate Glass Co. He has been with the firm since 1933, at first working in the soda ash and chlorine departments, and later serving as

The Felton Chemical Co. 25th Anniversary Dinner

assistant to the production manager at the firm's Barberton, O., plant.

The appointments of Dr. Albert E. Sidwell, Jr., as assistant director of research and Ralph F. Wolf as manager of compounding research for the Columbia Chemical Division were announced recently.

Givaudanian Revamped

A new format has been adopted by the *Givaudanian*, house magazine of Givaudan-Delawanna, Inc., New York, and additions to the size and scope of the publication are incorporated in the recently issued January, 1949, number. The issuance of the publication in revised form coincides with the 25th anniversary of the firm.

Right: First Shipment of "Tide," Procter & Gamble Co's. ne we st synthetic detergent for light duty washing including cottons, arrives in the New York marketing mid-February. "Tide" is currently retailing for 29 cents for the large size in New York chain stores. Full page advertisements in local newspapers and color insertions in newspaper magazine sections in metropolitan area papers were used to promote "Tide."

The product was introduced and tested in other sections of the U.S. earlier.



Test

YOUR SOAPS AND DETERGENTS FOR PERFORMANCE DATA...A VALUABLE PLUS FOR SELLING AND MERCHANDISING



Soaps and detergents are facing a highly competitive market . . . and new products are being introduced regularly. Those that are backed by real performance data . . . actual facts and figures . . . have an important jump on the market.

For laundering and dishwashing soaps and detergents, as well as toilet soaps, we have developed a program of research and testing based upon almost a half century of experience in serving the country's leading manufacturers.

Our soaps and detergent testing program gives you all the data you need for more effective merchandising:

- 1. Chemical analysis of soaps and other detergents.
- 2. Physico-chemical tests including detergency,

lathering qualities, wetting-out properties, stability characteristics, rinsibility, pH.

Bacteriological examination including skin irritation and toxicity tests.

Write for complete information on our soap and detergent testing and research. Ask for our price list of tests.

We are now offering standard soiled fabrics to those interested in the evaluation of detergent efficiency in their own laboratories. Further information will be supplied on request.



Chemical Division

UNITED STATES TESTING COMPANY, INC.

Established 1880

HOBOKEN, NEW JERSEY

PHILADELPHIA, PA. • BOSTON, MASS. • WOONSOCKET, R. I. CHICAGO, ILL. • NEW YORK, N. Y. • LOS ANGELES, CAL.

Member of American Council of Commercial Laboratories

New Solvay Detergent

"Nytron," a new type synthetic detergent, thus far produced only in pilot plant quantities, will be available in commercial lots as soon as a plant for its manufacture is completed at Hopewell, Va., by Solvay Process Co., division of Allied Chemical & Dye Corp., New York, it was learned recently.

A light, straw-colored liquid, the new detergent, which falls into none of the three main categories of synthetics, is an anion-active material. Non-toxic and having good foaming properties, it is expected to find continued and wide use for metal pickling. It is also said to be a good wetting agent for insecticide sprays.

Poucher Visits U. S.

William A. Poucher, head chemist of Yardley of London and its American affiliate, is currently visiting the United States for the first time. He expects to be here for about three months, during which time he will visit Yardley plants in the U. S. and Canada. Mr. Poucher, one of the world's best known soap

chemists, is the author of "Perfumes, Cosmetics and Soaps," a standard reference book in the field.

Cecil Smith, who recently retired as Yardley chairman, is on a three months' world cruise. He has been succeeded as president of Yardley of London, New York, by his son Philip C. Smith.

Reports on Detergent Use

American housewives are using as much of the synthetic detergents in hard water areas as they are of packaged soap products, according to Robert M. Prather, manager of market research of Indoil Chemical Co., Chicago, speaking at the New York meeting of the Chemical Market Research Association, at the Hotel Biltmore, Feb. 10. The number of synthetic detergents now on the market exceeds 500, representing 200 different commodities, made by about 100 companies. He set production as over 600 million pounds annually.

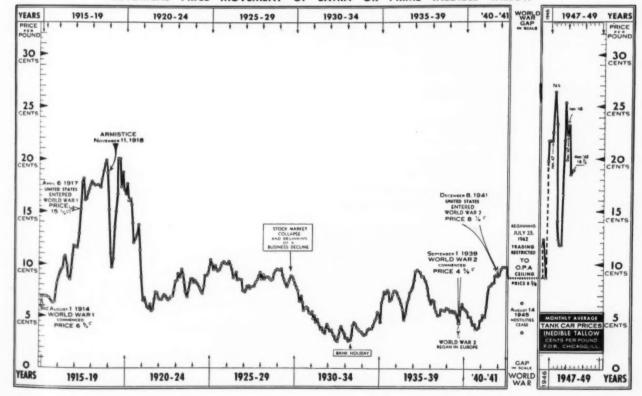
Chart of tallow prices below was prepared for and distributed recently by Spiegel & Peiffer, New York.

Polak & Schwarz Are 60

Polak & Schwarz, Zaandam, Holland, essential oil and aromatic chemical firm, celebrated their sixtieth jubilee with an anniversary dinner at the Hotel Krasnapolsky there, recently. The celebration was attended by over 1,000 persons. High spot of the event was the notification from Her Majesty, Queen Juliana, that Adolf Schwarz, director of the organization, had been elevated to the rank of Knight in the Order of Oranje Nassau. Polak & Schwarz, Inc., New York, sent flowers and congratulations to Mr. Schwarz.

The firm recently announced the establishment of Polak & Schwarz (Canada) Ltd. with Tony Burlinson in charge. Prior to this appointment, he was transferred from the Enfield office to the main offices and manufacturing plants of the firm at Zaandam and Hilversum, Holland. Later he spent some further time in England studying current market conditions in the British Empire.

HISTORICAL PRICE MOVEMENT OF EXTRA OR PRIME INEDIBLE TALLOW



PUBLICKER PRESENTS

PACTIVEX

A new surface active agent of outstanding efficiency

Physical Properties

Composition -40% alkylaryl sulfonate (prepared from dodecyltoluene). Unsulfonated oil does not exceed 1%.

Form-Free-flowing drum-dried flake.

Odor-Practically odorless.

pH-7-8 for 1% solution at 68°F.

Bulk-density-25-30 pounds per cu. ft.

Stable in presence of acids and alkali.

Excellent for compounding.

Surface Active Properties

- Lather height, Ross & Miles Test, 0.1% in distilled water at 125°F.— 160 mm. instantaneous foam decreasing to 141 mm. after 3 minutes.
- Sinking Time, Draves Test, 0.1% in distilled water at 125°F.—11 seconds.
- 3. Surface Tension, 0.1% in distilled water at 68°F.—34.3 dynes/cm.
- Interfacial Tension, 0.1% in distilled water at 68°F. against mineral oil— 4.9 dynes/cm.

PACTIVEX is not just another detergent. For most uses, it is the best alkylaryl sulfonate yet developed. If you will submit fully the details of your problem, our Applications Laboratory will be pleased to supply suggestions and formulations. Or, if you prefer, we shall send samples and literature for your evaluation.

PUBLICKER INDUSTRIES INC.

NEW PRODUCTS DIVISION
1429 WALNUT STREET, PHILA. 2, PA.

BIDS AND AWARDS

Kamen Gets VA Bid

The Veterans Administration awarded a \$60,174 contract to the Kamen Soap Products Co., New York, for 573,800 pounds of laundry soap and soap powder, A. J. Harrison, chief of VA's procurement division announced recently.

Items included in the contract are: ordinary bar laundry soap, 259,500 pounds at \$.0787 per pound for a total of \$20,422.65; powdered laundry soap, 271,500 pounds at \$.1244 per pound, totaling \$33,923.88; and low-titer powdered laundry soap, 42,800 pounds at .1690 per pound, amounting to \$6,827.60.

Treasury Soap Bids

In a recent opening for miscellaneous supplies by the Federal Bureau of Supply, U. S. Treasury Department, Washington, D. C., the following bids were received on an unspecified quantity of soap powder: George Chemical Products Co., Boston, 6.5 cents (60 to a carton); E. F. Drew & Co., New York, six cents, (60 to a carton); Allen Burns Co., Buffalo, eight cents, 13-ounce (60 to a carton); Stevens Soap Corp., Brooklyn, 4.9 cents; Chemical Manufacturing & Distributing Co., Easton, Pa., 5.2 cents; Procter & Gamble Distributing Co., Baltimore, \$3.72 a case, 60 141/2-ounce packages; Globe Grocery Co., South Boston, 22 cents; Chicago Sanitary Products Co., 12 cents; Quigley & Co., New York, six cents, (24 to a carton); Turco Products, Chicago, 11.65 cents, (24 to a case); Kamen Soap Products Co., New York, 4.64 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 6.384 cents, 13-ounce packages, (60 to a carton).

Treas. Metal Polish Bids

Bidders on an unspecified quantity of metal polish in a recent opening for miscellaneous supplies by the Bureau of Federal Supply, Treasury Department, Washington, D. C., included: Oil Specialties & Refining Co., Brooklyn, 16 cents;

La France Shoe Polish Co., Highland, Ill., 24 cents; California Chemical Co., North Sacramento, 39 cents; Walter W. Miller Co., Indianapolis, 30 cents; Trio Chemical Works, Brooklyn, 11.7 cents; R. M. Hollingshead Corp., Camden, N. J., 15.9 cents; Chemical Manufacturing & Distributing Co., Easton, Pa., 50 cents; Ches White Co., Baltimore, 22 cents; Imperial Products Co., Philadelphia, 14.2 cents; John J. Lanczycki, New Bedford, 85 cents; John C. Stalfort & Sons, Baltimore, 16.5 cents; Haviland Products Co., Grand Rapids, 77 cents; H. Behlen & Brothers, New York, 22 cents; Fuller Brush Co., Hartford, Conn., 26 cents; Noxon, Inc., Ozone Park, N. Y., 27.833 cents; Lasting Products Co., Baltimore, 25 cents; International Metal Polish Co., Indianapolis, 24 cents; Bri-Test, Inc., New York, 16.5 cents; Maggivia Chemical Co., Los Angeles, 41 cents.

Pyrethrum Bids

In a recent opening for miscellaneous supplies by the U. S. Departmentof Agriculture, Washington, D. C., the following bids were received on 75 pounds of purified pyrethrum extract: U. S. Industrial Chemicals, Inc., New York, \$600; S. B. Penick & Co., New York, \$600; Mc Laughlin-Gormley-King Co., Minneapolis, \$551.25.

OMC Awards

The following awards were announced on recent openings by the Army Quartermaster Corps, New York: powder mobile laundry detergent, Anatara Products division, General Aniline & Film Corp., New York, 215,000 pounds at 35.2 cents, 217,000 pounds at 34.5 cents and 217,000 pounds at 35.2 cents; Monsanto Chemical Co., St. Louis, 490 L.T. DDT concentrate (100%) technical grade at \$706.60 per long ton; United States Soap Manufacturing Co., Philadelphia, 4,000,000 two-ounce cakes of white floating

soap at 0.181 cents; Stahl Soap Corp., Glendale, N. Y., 960,000 cakes white floating soap at .049 to .0549 cents (six ounce cake); Pioneer Soap Co., San Francisco, 40,000 cakes of white floating soap at .0534 cents.

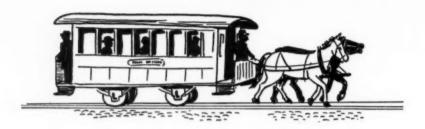
P.O. Paste Soap Bids *

In a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., the following bids were received on 30,000 pounds of paste soap: Pacific Chemical Co., Los Angeles, 11.4 cents a pound; R. M. Hollingshead Corp., Camden, N. J., 12 cents; Clifton Chemical Co., New York, 8.75 cents; Fischer Industries, Cincinnati, 9.98 cents; Chicago Sanitary Products Co., 10.8 cents; E. F. Drew & Co., New York, 7.79 cents; Harley Soap Co., Philadelphia, 7.7 cents; Crystal Soap & Chemical Co., Philadelphia, 9.82 cents; Peck's Products Co., St. Louis, 7.05 cents; Bri-Test, Inc., New York, 7.9 cents.

Floor Wax Bids

The following bids were received on 1,375 gallons of floor wax in a recent opening for miscellaneous supplies by the Federal Bureau of Supply of the U.S. Treasury Department, Washington, D. C.: Oil Specialties & Refining Co., Brooklyn, 67.3 .cents; Beacon Co., Boston, \$1.30; Butcher Polish Co., Boston, \$1.25; John J. Lanczycki, New Bedford, Mass., \$4.60; Chemical Compounding Corp., Brooklyn, \$1; Ches White Co., Baltimore, 64 cents; Huntington Laboratories, Huntington, Ind., \$1.30; International Metal Polish Co., Indianapolis, \$1.50; Trio Chemical Works, Brooklyn, 54 cents; Lucas Chemical Co., Detroit, \$1.215; Industrial Soap Co., St. Louis, \$1.55; Harley Soap Co., Philadelphia, \$1.03; New Jersey Chemical Co., Lyndhurst, N. J., \$1.03; Fuller Brush Co., Hartford, Conn., \$1.27; Joe. E. Frankle Co., Philadelphia, 65 cents; Wilbert Products Co., New York, 95 cents; Buckingham Wax Co., Long Island City, N. Y., 58.4 cents; R. M. Hollinghsead Corp.,

(Turn to Page 155)



Since the Days of the Horse Car...

Soapers have depended on WH&C ... for Raw Materials of Quality

FROM THIS LIST

VEGETABLE OILS

Babassu Olive
Castor Palm
Cocoanut Peanut
Corn Sesame
Cottonseed Soybean

ANIMAL FATS

 Sperm Oil
 Grease

 Oleo Stearine
 Tallow

 Lard
 Lanolin

Neatsfoot Oil

FATTY ACIDS MINERAL OILS PETROLATUM

ALKALIES and other chemicals STARCH and SOURS

SILICATE OF SODA "METSO"

QUADRAFOS

granular and beads. A stable polyphosphate for water conditioning and mild but effective detergency.

AIR DRYETTES
CALCIUM*CHLORIDE

THE MAYPONS

Unique surface active agents, prolific foam, high detergency and emulsifying powers, suitable for cosmetic and industrial use.

SINCE 1838, we've been supplying the nation's "soapers" with basic raw materials—everything from Acid oils and Adeps Lanae to Waxes and Wetting agents.

If you need one drum in a hurry — or a hundred cars on contract — give WH&C a ring. You'll probably enjoy doing business with this 110 year old organization . . . a firm that believes in applying the Golden Rule to business as well as to private life.



Let us mix your dry private formulas

Welch, Holme & Clark Co., Inc.

439 WEST STREET

NEW YORK 14, N.Y.

Warehouses in New York and Newark, N. J.

RAW MATERIAL MARKETS

As of March 3, 1949

ECLINES continued to mark the fats and oils market during the month of February, as prices, hitting their lowest figures since pre-OPA days, began to show some signs of leveling off. Although the world shortage of fats and oils continues, with 1948 production above the previous year's but below pre-war by some four per cent, prices failed to respond to the stimulus of decontrols announced early last month.

The inedibles continue to be featured by lack of buying interest, although there have been reports of some sales of tallow for export. Coconut oil and copra prices are both slightly above the figures of a month ago, but tallow, the other major soap fat, is 34ths of a cent under the price on this date in February. Fancy grade tallow is being quoted at around eight cents a pound, with not too much interest reported being shown by soap buyers. Coconut oil is currently listed at 151/2 cents a pound for the crude, Pacific Coast basis. It was 131/2 cents a month ago. All other oils showed declines. Crude soybean oil is being listed at 121/2 cents a pound, as against 123/4 cents in early February; Corn oil is 131/4 cents now, a drop from the 15 cents it was bringing a month previously and peanut oil, at 17 cents a pound on February 1, is now available at 151/2 cents. Cottonseed oil also went lower during February, being quoted at 13 cents a pound early in March, as compared with 14 cents a month before. Copra at \$205 a ton, Pacific Coast, is \$15 higher than on the corresponding date in February.

The barometer of the soap market, 88 per cent tallow chip soap, reflecting declines in the fat and oil market, is now down to its lowest price level in some time. In carload lots, 88 per cent tallow chip in bags is bringing around 113% cents a pound. The new price, which went into effect in mid-February, is off from the previous price of 14 cents established January 17. A year ago last month 88 per cent tallow chip soap was being quoted at 29 cents a pound. During OPA days, the price was fixed at 12½ cents a pound.

PREDICTION that consumption of fats and oils probably will be larger during the 1948-49 crop year, than in the comparable period a year earlier was made recently by the Bureau of Agricultural Economics of the U.S. Department of Agriculture. At the same time it was announced that U. S. exports and production would be higher during the coming year. In addition to greater domestic production of fats and oils in the United States during the 12 month period beginning with October, 1948, world production of fats and oils is expected to be up considerably from last year. In 1948, world production was slightly greater than in 1947, but still about four per cent under prewar. If 1949 production of fats and oils for world trade achieves predicted levels, there may be 600,000,-000 tons available for international trade.

Olive oil production in 1948-49 was about 40 per cent below the previous year's output. On the other hand, total production of coconut oil, palm oil and palm kernel oil in 1948 was about the same as in 1947. The reduction in the amount of copra produced and the Philippines was just about offset by increased a mounts turned out in Indonesia and the South Pacific Islands, a recovery of production

in the Netherlands Indies and a return to full copra production in Ceylon.

Palm oil production in the Belgian Congo made a slight gain last year and in the Netherlands Indies recovery of production on a substantial scale was indicated. Larger supplies of palm oil from Sumatra are expected during 1949, provided the work of rehabilitating plantations continues at its present pace.

In a recently issued summary of the fats and oils situation, the U. S. Department of Agriculture made the following points. Production of inedible tallow and greases during the Oct.-Dec. quarter was lower than in the comparable quarter a year earlier. An increase in animal fat production, as compared with 1948, is in prospect for 1949, beginning sometime this spring. Production of lard probably will be smaller in the Jan.-Mar., 1949 quarter than in the preceding three months, but probably will be about the same as in the 1947 quarter. A rising trend in output of both lard and grease is in prospect for this spring as a result of an eight per cent increase in the 1948 fall pig crop and a probable increase of 10 or more per cent in the 1949 spring pig crop. By summer and fall of 1949, lard and grease production is likely to more than offset a drop in output of inedible tallow, resulting from a further decline in cattle slaughter in 1040

Carnauba wax recently advanced one to two cents a pound, marking the only price activity of any consequence in the wax market.

Essential oils showed a tendency during the end of February and the first few days of March to advance in price following a long period

(Turn to Page 143)



Sprays . . . can be effective . . . yet not offensive

Satisfactorily covering any disagreeable basic odors in sprays, Schimmel double-duty spray perfumes are designed either to pleasantly perfume or to give a neutral, fresh effect to your spray.

> The following compounds have been developed in our laboratories especially for use in sprays: (Use 1/4 oz. to 1 gallon)

WITH PERFUME EFFECT:

Well rounded and smooth odor combinations which neutralize the odor of the base and add pleasing perfume notes.

the one	. Or ento	arean desare	and beginn beriams notes		
	Per	In 25		Per	In 25
	Lb.	Lb. Cans		Lb.	Lb. Cans
Acacia S 119	\$2.15	\$2.00	Narcissus S 158	83.00	\$2.85
*Arbutus S 986	2.50	2.35	*New-mown Hay S 2090	2.60	2.45
Chypre S 168	2.85	2.70	Pine S 3638	2.50	2.35
Clover S 45	2.50	2.35	†Pinencedle S 84	6.35	6.20
Fougere S 170	2.50	2.35	*Pink Blossom		
Gardenia S 171	2.00	1.85	(Carnation) SS 209	4.30	4.15
†*Gardenia S 1086	3.00	2.85	*Rose G 1146	7.50	7.35
†Heliotrope S 155	3.00	2.85	Rose SS 210	4.75	4.60
Jasmine S 44	2.50	2.35	Sylvatic Perfume K	9.75	9.60
Jasmine S 59	4.25	4.10	†Tuberose S 177	2.25	2.10
Jasmine S 452	1.75	1.60	Violet S 160	3.75	3.60
Lavender S 157	2.50	2.35	Violet S 3037	2.50	2.35
†Lilac S 154	2.50	2.35	Wallflower S 4433	2.75	2.60

WITH NEUTRALIZING EFFECT:

Deodorizing the base and giving a clean refreshing effect.

†Ampolene	Per Lb. \$1,60	In 25 Lb, Cans 1.45	†Deodor 100	Per Lb. \$3.75	In 25 Lb. Cans \$3.60
†Cipolene		1.20	†*Deodor 200	2.45	2.30
†Dopolene	3.35	3.20	Deodor 200 A	1.85	1.70
Limolene		1.65	Deodor 300	2.10	1.95
*Ropolene	1.95	1.80	Deodor 3628	4.50	4.35
Ropolene II		1.55	Deodor 3629	2.60	2.45

* Especially adapted for sprays containing Lethane (use 1/2 to 1/4 oz. per gal. of spray)
† Especially adapted for sprays containing Thanite (use 1/4 oz. per gal. of spray)

If your spray presents special problems, send us an unperfumed sample. We will be glad to work out an odor suitable to your product.

All Schimmel spray perfumes are compatible with DDT, Pyrethrum, Lethane, and other killing agents and do not impair nor in any way detract from their potency.

SCHIMMEL & Co., Inc.

601 West 26th Street New York 1, N. Y. WAtkins 4-1393



THE following trade-marks were published in the February issues of the Official Gazette of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

DB-50—This for insecticides. Filed Dec. 1, 1945 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since May 17, 1945.

Azofume-70—This for fumigant for control of red spider. Filed Mar. 1, 1946 by Plant Products Corp., Blue Point, N. Y. Claims use since Nov. 9, 1945.

Tat Formula "83"—This for rodenticides. Filed Jan. 18, 1947 by O. E. Linck Co., Clifton, N. J. Claims use since Jan. 24, 1946.

Perma Suds—This for soap. Filed Sept. 30, 1946 by Le Blanc Laboratories and Distributing Co., Grand Rapids, Mich. Claims use since Oct. 12, 1945.

FVM Co.—This for silver and metal polishes. Filed Dec. 17, 1948 by French Veneer Manufacturing Co., Los Angeles. Claims use since Apr., 1913.

Mystic Dri-Quick—This for dry cleaner. Filed Mar. 5, 1947 by Mystic Foam Corp., Cleveland. Claims use since Nov. 22, 1946.

Here Comes Loo Loo—This for general purpose cleaner. Filed Oct. 6, 1943 by Loo Loo, Des Moines, Ia. Claims use since June, 1940.

R-M—This for liquid cleaner for lacquered or enamel surface. Filed Feb. 17, 1947 by Rinshed-Mason Co., Detroit. Claims use since Feb., 1945.

Vitresan—This for water soluble glass, or waterglass used as detergents. Filed May 17, 1947 by Economics Laboratory, Inc., St. Paul. Claims use since Aug. 1, 1946.

Pigtail Parade—This for bubble bath. Filed Oct. 29, 1945 by Wetherholt's Perfume Co., Chicago. Claims use since Apr. 26, 1945.

PSC—This for cleaning compounds. Filed July 24, 1946 by Phillips Chemical Co., Chicago. Claims use since Nov. 13, 1945.

Whirlaway—This for cleaning composition. Filed Apr. 26, 1947 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since Mar. 24, 1947. Wonder—This for insecticide. Filed Sept. 30, 1946 by Cook Chemical Co., Kansas City, Mo. Claims use since May 1945.

Pensalt Whirlaway—This for cleansing composition. Filed Apr. 26, 1947 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since May 24, 1947.

Sanisheen—This for floor wax. Filed May 25, 1946 by Sanitex Products, Inc., Los Angeles. Claims use since Sept., 1943.

Ditzler—This for polish and cleaner for lacquered and enameled surfaces. Filed Mar. 5, 1947 by Pittsburgh Plate Glass Co. Claims use since Jan. 1, 1941.

The following trade-marks are published in compliance with section 13 (a) of the Trade-Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of \$25 must accompany each notice of opposition.

Eessco—This for empty poison containers in the nature of paper cups. Filed Nov. 18, 1947 by Exterminator's Equipment and Safety Supply Co., Chicago. Claims use since July 1, 1947.

Poly-Suds—This for granular soap. Filed Mar. 6, 1948 by Overton Chemical Co., Summer, Ia. Claims use since June 1, 1945.

Harley-Davidson—This for chrome polish and cleaner. Filed Aug. 12, 1947 by Harley-Davidson Motor Co., Milwaukee. Claims use since 1934.

Kleen-Urn—This for general purpose kitchen utensil cleaner. Filed Oct. 21, 1947 by Tomlinson Industries, Inc., Cleveland. Claims use since June 1, 1934.

Eastern States Cooperative—This for cleansing compound for dairy use. Filed Mar. 5, 1948 by Eastern States Farmers' Exchange, West Springfield, Mass. Claims use since May, 1935.

Sergeant's—This for flea soap. Filed July 8, 1948 by Polk Miller Products Corp., Richmond, Va. Claims use since Dec., 1885.

Chirp—This for cleaning composition for painted surfaces. Filed Aug. 9, 1948 by Monsanto Chemical Co., St. Louis. Claims use since July 1, 1948,

Snow White—This for shampoo cream. Filed Nov. 6, 1947 by Snow White Products Cc., Lynchburg, Va. Claims use 1923.

Sepco-W—This for fungicidal composition. Filed Sept. 22, 1947 by Sequoia

Products Co., Eureka, Calif. Claims use since June 22, 1947.

Andrew Wilson—This for insecticides. Filed Oct. 8, 1947 by Andrew Wilson, Inc., Springfield, N. J. Claims use since Feb., 1914.

Givaudan-Delawanna—This insecticidal and germicidal compositions. Filed Sept. 30, 1947 by Givaudan-Delawanna, Inc., New York. Claims use since Aug. 15, 1939.

Atolak—This for liquid automobile wax and cleaner. Filed Oct. 23, 1947 by Atomix, Inc., Mount Cuba, Del. Claims use since Sept. 2, 1947.

Kensington—This for sudsing cleaner. Filed July 5, 1947 by Hewitt Soap Co., Dayton, O. Claims use since Apr. 1935.

Gold-Bond—This for automobile cleaner. Filed July 25, 1947 by Gold Bond Products Co., Terre Haute, Ind. Claims use since June 1, 1935.

Parade—This for detergent cleaning powder for home and laundry use. Filed Aug. 13, 1947 by Par Soap Co., Oakland, Calif. Claims use since Dec. 19, 1946.

Solubri—This for cleansing dental instruments. Filed Aug. 7, 1947 by Cleveland Dental Manufacturing Co. Claims use since Apr. 24, 1924.

No-Derm—This for soap. Filed Sept. 6, 1947 by Geo. L. Williams Co., Cleveland. Claims use since Aug. 14, 1947.

Electra-Sol—This for dishwashing compound for use in electric dishwashers. Filed Oct. 20, 1947 by Economics Laboratory, Inc., St. Paul. Claims use since Sept. 10, 1947.

Hand Witch—This for soap. Filed Oct. 31, 1947 by Nickle Plate Stove Polish Co., Chicago. Claims use since 1925.

West—This for liquid soap. Filed Apr. 12, 1948 by West Disinfecting Co., Long Island City, N. Y. Claims use since 1913.

Glorex—This for detergent for use in dishwashing. Filed Apr. 24, 1948 by Jewel Tea Co., Barrington, 1ll. Claims use since 1945.

Lamco—This for preparations for control of fleas, ticks, etc. Filed Oct. 8, 1947 by L. A. Mosher Co., Atlanta, Ga. Claims use since Sept., 1945.

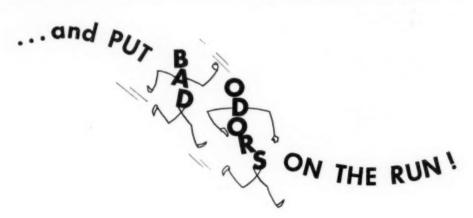
Fashion of Hollywood—This for shampoo. Filed Jan. 19, 1948 by Howe-Lewis, Inc., Los Angeles. Claims use since Nov. 1, 1932.

Drought—This for insecticidal chemical. Filed Feb. 9, 1948 by Drought Products, La Mirada, Calif. Claims use since July, 1946.

D-String—This for insect repellents. Filed Feb. 19, 1948 by D-String Co., Chicago. Claims use since Dec. 6, 1947.

BHB—This for cream shampoo. Filed Dec. 21, 1948 by Beautymasters of Beverly Hills, Inc., Milwaukee. Claims use since Mar., 1946. Consult FRITZSCHE for GOO





*for EVERY PURPOSE

FRITZSCHE Established \$1871

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH OFFICES and *STOCKS: Aslanta, Georgia, *Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Obio, Glevoland, Obio, Dalles, Texas, Detrois, Michigan, *Los Augeles, California, Philadelphia, Pennsylvania, San Francisco, California, *St. Lauis, Missouri, *Torosto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

Fosvex—This for insecticides. Filed June 10, 1948 by Food Machinery and Chemical Corp., New York. Claims use since Nov. 21, 1947.

SFX Joseph's—This for hair shampoo. Filed June 11, 1948 by Joseph's S-F-X Shampoo, Buffalo, N. Y. Claims use since June, 1936.

Em Bee—This for spot cleaner and all surface cleaner. Filed Jan. 6, 1948 by Meyer Brothers, Paterson, N. J. Claims use since Aug., 1938.

SQ-40—This for synthetic detergent compositions for general cleaning purposes. Filed Apr. 17, 1948 by Monsanto Chemical Co., St. Louis. Claims use since Mar. 8, 1948.

Drip—This for waterless hand cleaner. Filed Apr. 27, 1948 by Lee Products, Buffalo, N. Y. Claims use since Mar. 18, 1948.

Eastern States Cooperative—This for disinfectants. Filed Mar. 5, 1948 by Eastern States Farmers' Exchange, West Springfield, Mass. Claims use since Apr. 5, 1934.

Purina—This for insecticides. Filed Mar. 22, 1948 by Ralston Purina Co., St. Louis. Claims use since May 1, 1931.

Porenac—This for detergent composition for industrial and household cleaning. Filed Nov. 12, 1947 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since July 30, 1946.

Snow White-This for toilet soap.

Filed Dec. 18, 1947 by Snow White Products Co., Lynchburg, Va. Claims use since July 1, 1931.

Beauty in the Morning—This for soaps. Filed Apr. 3, 1948 by Universal Laboratories, Inc., East Orange, N. J. Claims use since Mar. 22, 1948.

Meteor—This for detergent for washing dishes. Filed Apr. 24, 1948 by Jewel Tea Co., Barrington, Ill. Claims use since Dec. 10, 1942.

Takimerse—This for preparation for the removal of stains from fabrics. Filed Apr. 28, 1948 by Takaimine Laboratory, Inc., Clifton, N. J. Claims use since Feb. 19, 1948.

Meteor—This for heavy degressing and bottle washing compound. Filed June 3, 1948 by Cudahy Packing Co., Chicago. Claims use since Feb. 9, 1938.

Skoot—This for chemical cleaning fluid for removing surface stains. Filed July 23, 1948 by Hysan Products Co., Chicago. Claims use since June 23, 1936.

QET—This for cleaning preparations. Filed Dec. 18, 1947 by Pacific Chemical Co., Los Angeles. Claims use since May 5, 1947.

Trex—This for emulsifiers for insecticidal materials. Filed Aug. 19, 1947 by Griffin Chemical Co., San Francisco. Claims use since Apr. 11, 1947.

Double Feature—This for shampoo in cream form. Filed Nov. 4, 1947 by Bonne Nell, Inc., Lakewood, O. Claims use since Oct. 11, 1947.

Moth-Away—This for insecticides. Filed July 24, 1947 by O-Cedar Corp., Chicago. Claims use since Mar. 4, 1940.

SanAnco—This for DDT insecticides. Filed Feb. 19, 1948 by San Antonio Drug Co., San Antonio, Tex. Claims use since Feb. 1, 1910.

Homart—This for boiling cleaner compound. Filed Feb. 24, 1948 by Sears, Roebuck and Co., Chicago. Claims use since July 15, 1947.

Fluor-amm-ine—This for dentifrice. Filed Apr. 3, 1948 by Fluor-Amm-Ine Co., Minneapolis. Claims use since Mar. 10, 1948.

Dalite—This for detergent in liquid form for use in cleaning glass. Filed Nov. 4, 1947 by International Rustproof Corp., Cleveland. Claims use since Mar. 15, 1931.

Mobo—This for powdered car washes. Filed Jan. 6, 1948 by John T. Stanley Co., New York. Claims use since Apr. 10, 1905.

Pat—This for eyeglass cleaner. Filed Jan. 21, 1948 by Patrick Sales Co., San Francisco. Claims use since Jan. 2, 1948.

Tafon—This for soapless cleanser. Filed May 12, 1948 by Triangle Chemical Co., Macon, Ga. Claims use since Nov. 14, 1947.

Blair of Virginia—This for liquid shampoo. Filed July 27, 1948 by Blair





A. GROSS PRODUCTS

Stearic Acid
Tallow Fatty Acids
Red Oil (Oleic)
White Oleine
Coconsut
Fatty Acids
Cottonseed
Fatty Acids
Mixed Caprylic
A Capric Acids
Saponification
Crude Glycerine
Stearine Pitch

Coconut fatty acids in laboratory and plant alike get the same stamp of approval as other Gross Fatty Acids. Trade reports show laboratory tests of "Excellent." Actual plant results confirm these reports. White color, fast wetting power and excellent detergency of finished products assure customer acceptance in the textile field.

Gross Special Coconut Fatty Acids (with most of the Caprylic and Capric Acids removed) give detergent manufacturers a more desirable product.

RED OIL—Bland odor, low titre, light color. Produced entirely from selected animal fats. Improved chemical and physical properties due to modern distillation and control.

Manufacturers since 1837

AGENTS:

George Mann & Co., Inc. Providence 3, R. I. Baker & Gaffney Philadelphia 7, Pa. Braun-Knecht-Heimann C San Francisco 13, Calif. Cadillac Chemical Div., Nelson Chemicals Cerp., Detroit 27, Michigan J. C. Ackerman Pittsburgh, Pa. Braun Corp.
Los Angeles 21, Calif.
Thompson Hayward Chemical Co.
Kansas City 8, Mo. (and branches)
Mereland Chemical Co.
Spartanburg, S. C.
Smaad & Small, Inc.
Cleveland 15, Ohio

Charles Albert Smith, Ltd. Terente 3, Canada



of Virginia, Lynchburg. Claims use since July 1, 1943.

July 1, 1943.

Spirco—This for liquid non-slip polish for wooden and other flooring. Filed Aug. 22, 1947 by Walter G. Legge Co., New York. Claims use since Aug. 15, 1946.

Sulfation Corrosion

Sulfation and sulfonation, so much used in preparation of synthetic detergents and other surface-active agents, is a highly corrosive process. Metals resistant to corrosion have been studied; "Monel" metal and "Hastelloy" products offer more resistance to corrosion than a number of other alloys. Data are given for the corrosive effect during different stages of processing treatment, with results as to corrosion resistance of a number of commercial alloys. W. Z. Friend, J. Am. Oil Chemists' Soc. 25, 353-8 (1948).

New Stokes Co. Catalog

Catalog #480-T containing information on tablet-making equipment and machinery is currently being distributed by the F. J. Stokes Machine Co., Philadelphia. The catalog also describes and illustrates pharmaceutical and special processing equipment.

New Launder-Ometer

An improved Launder-Ometer with a control cabinet for greater convenience to the operator has been developed by Atlas Electric Devices Co., Chicago. The new cabinet contains all switches, pilot light indicating and control instruments in one compact unit. It has a direct-reading thermometer to give a check on the water bath.

Data on New Valve

Section 5 of Valve Reference Book No. 39 was issued recently by Homestead Valve Manufacturing Co., Coraopolis, Pa., covering the Homestead-Reiser "Self-Sealed" lubricating plug valve. In addition, general catalog data, descriptions, specifications and prices on units, parts and accessories are included.

Mathieson Chlorine Book

A new booklet on the handling of liquid chlorine was published recently by Mathieson Chemical Corp., New York. Subjects covered in the booklet, entitled "Mathieson Chlorine," include shipment and storage of liquid chlorine with data

on chlorine cylinders, ton containers, and tank cars; methods of handling dry and moist chlorine; and safety in the use of chlorine, including first aid for chlorine exposure. Copies of the booklet are available on request by writing the company.

New Scottish Detergent

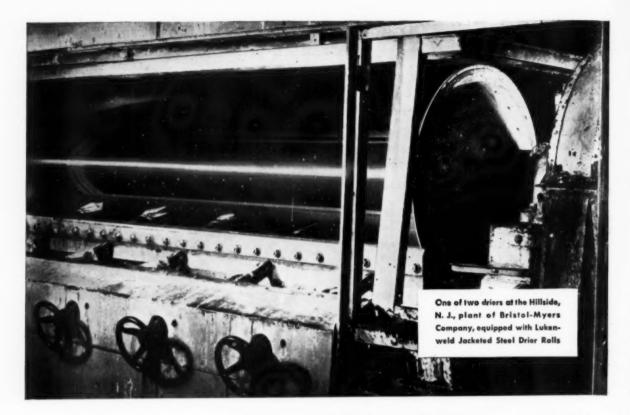
A new detergent developed by the research staff of Scottish Oils, Ltd., in collaboration with the Anglo-Iranian Oil Co. Ltd., is in production. The plant capacity is for 10,000 tons or 2,000,000 gallons annually. The product is named "Iranopol." *Chem. Trade J.* 123, 146 (1948).

Corrosion Conference

The fifth annual conference and exhibition of the National Association of Corrosion Engineers will be held Apr. 11-14, 1949 at the Netherland-Plaza Hotel, Cincinnati. Discussion of corrosion in various industries and exhibits showing materials, equipment, methods and services for preventing or combatting corrosion will be featured.



ble



Bristol-Myers *Upped Production 41%*with Lukenweld Jacketed Drier Rolls

200 pounds of dried, flaked material every 7 to 8 minutes instead of the 10 to 11 minutes formerly required! That's how much Bristol-Myers stepped up output from these machines simply by replacing drum-type rolls of different material with Lukenweld Jacketed Steel Drier Rolls—an average increase of 41%.

No other changes were made. The increased production was entirely due to the increased drying rate and positive method of condensate removal of rolls of Lukenweld design and steel plate construction. Had steam pressure been increased above the 80 psi used in both old and new rolls,

the drying rate could have been further increased.

Records since installation of the Lukenweld Rolls in 1938 show a further saving. Despite the action of a 30% saline solution, the steel plate roll faces, which are chromium-plated, have lasted over six years. In contrast, chromium-plated surfaces on the old style rolls had to be refinished every year and a half.

If you have a job calling for roll drying, you can probably do it better and faster with Lukenweld Jacketed Steel Drier Rolls. Bulletin 358 tells you about them. Lukenweld, Division of Lukens Steel Company, 446 Lukens Building, Coatesville, Pa.

We'll lend you "LUKENWELD", a 16mm motion picture with sound, highlighting our methods, facilities and products. Running time: 20 minutes. Write for booking date.



LUKENWELD ORIER ROLLS AND DRYING MACHINERY

. . SPEED SCRAP TO THE MILLS TO MAKE MORE STEEL . .

PRODUCTION

Industrial Uses of Synthetics

SYNTHETIC detergents and surface-active agents are widely used in many applications, some of which have been discussed at length. Some of the more unusual applications are the following:

For Fur and Leather

The scouring of sheepskin fleeces is similar to raw wool scouring except that milder materials must be used. Synthetic detergents enable alkali concentrations to be reduced, and adsorption of the anion produces an excellent handle on the fleece. They also improve the effectiveness of soaking, scouring, and dyeing of smaller skins and furs. Most types of surface-active materials have been used, but particularly the primary and secondary alkyl sulfonates and alkyl amide sulfonates.

In leather manufacture wetting agents are used extensively during soaking dry hides, and they greatly accelerate the swelling necessary for satisfactory tanning. The wetting agent must have a soluble calcium salt or trouble will develop during the subsequent limeing. Polyethylene oxide condensation products are effective in degreasing wet pickled goatskins prior to tanning. Small quantities of wetting agents are used to impart to fat-liquoring emulsions a high degree of penetration, as in manufacture of supple gloving leathers.

Metal Treatment

Employment of surface-active agents in the preparation of oil-free surfaces on metals has been a comparatively recent development. Aqueous degreasing as opposed to solvent degreasing, is actually in fairly widespread use. Secondary alkyl sulfates and alkyl aryl sulfonates, in conjunction with an appropriate alkali, are effective for most types of metal. They reduce the processing time and the concentration of alkali required. Synthetic agents help produce finer grain and more uniform deposits in electroplating by increasing the efficiency of contact between the solution and the metal. Secondary alkyl sulfates and alkyl aryl sulfonates are effective adjuncts in the acid pickling of steel, the brightening of brass and copper, and the phosphoric-acid cleaning of aluminum.

In Dairy and Food Industries

In the dairy industry, efficient cleansing of different materials is a serious problem and involves removal of fat deposits which harbor bacteria, and of hard milkstone deposits which build up in pasteurizing equipment. Normally the equipment is washed out daily with alkali followed by dilute phosphoric acid to dissolve the milkstone. Now incorporation of an anionic wetting agent in the alkali detergent improves the efficiency of the cleansing operation so greatly that the necessity for acid treatment is practically eliminated.

One of the main difficulties with synthetic detergents in mechanical washing of bottles etc. is foam formation. A careful choice of alkaline detergents enables reasonably satisfactory results to be obtained, while it has been shown that twin C₆-C₉ groups, used instead of the longer cetyl chain in cationic agents, give products in which a bactericidal

effect is maintained without foaming, even under conditions of high agitation.

The Future

Production of high-grade synthetic agents at a reasonable price for industrial purposes will depend on the total-market demand. The agents available to industry are likely to be very closely allied to those finding greatest acceptance on the domestic market. The most likely source of raw material in the future is petroleum, from which both alkyl aryl sulfonates and secondary alkyl sulfates can be manufactured on a large scale at an economic cost; it is probable that these types will comprise the major portion of synthetic detergents for some time to come. E. S. Paice, Chem. and Ind. 1948 691-4.

New Grease Making Process

A new plant for production of lime-soap greases is in operation by the Esso Standard Oil Co. Employing lime, animal or vegetable fats, and oil, the continuous process for making grease revolutionizes greasemaking because of its speed, its economical use of fatty ingredients, and the uniformity of the finished product.

One of the major achievements in operation is the mixer which blends soap and oil so well that less soap in proportion to oil, yields an identical grade of grease.

The key unit in the new process is a rapid soap cooker, which in 45 minutes completes the three and a half hour job of the old pressure kettle. The rapid cooker consists of



Dow Aromatic Specialty contributes a note of
precious woods and orris violet for modern oriental effects. Exceptionally
versatile, Sylviola will serve a wide and varied range of uses. It
conforms, of course, to Dow's exacting standards of odor fidelity and uniformity. A request
on your company letterhead will bring working sample and complete details.

THE DOW CHEMICAL COMPANY . MIDLAND, MICHIGAN

Aromatics
INDISPENSABLE TO THE CREATIVE PERFUMB

a heat exchanger and three tanks, each of which holds 2000 pounds of soap mixture. The raw materials, lime and fat, are pumped into the first tank, circulated through a heat exchanger, and back into tank No. 1 until the soap is finished. Meanwhile, tank No. 2 is filled in readiness for cooking as soon as No. 1 is finished, and tank No. 3 is discharging soap into a mixer where mineral oil is added.

Soap enters the mixer from the tank at one side, oil from the opposite side, and the two are blended amid cyclonic turbulence. The finished grease is forced out of a filling pipe. Packaging is carried on simultaneously.

A pressure viscometer continously takes a small sample of finished grease from the filling line. If any change in consistency occurs, the intrument automatically operates valves which halt the mixing until the plant operator finds the difficulty and corrects it. *Chem. Age* 59 308 (1948).

Rancidity Determination

The determination of peroxide is considered the most reliable and simplest method for determining rancidity. Flasks of oil wrapped in different colored "Cellophane" and exposed to the sun were least acted on when protected by green wrapping, most by violet. When a trace of eosin was dissolved in the oil, the peroxide number was the highest in the green-wrapped flask. M. Lundborg, Festskr. J. Arvid Hedvall 1948, 361-77; through Chem. Abs.

Oil Extraction

Cottonseed, soybean, copra, and flaxseed yield prime oils by extraction with trichloroethylene. This liquid is a powerful oil solvent and is noninflammable. Because of this a number of safety control measures formerly required with flammable solvents can be eliminated, resulting in a great saving in the cost of extraction equipment. Application to some of the oils is in the pilot stage, but the difficulties encountered appear to be minor. I. J. Duncan, J. Am. Oil Chemists' Soc. 25, 277-8 (1948).

Modern Laundry Practice

O MOST workers, the conception of solid dirt is that it is ordinarily coated with some kind of greasy film so that its removal may be considered to be similar to removal of an oil film from fabric.

Suspending Power

In its simplest sense, suspending power means the power to slow down the rate of settling of suspended matter, but in laundry and other textile cleaning processes, there is an almost continuous state of mechanical agitation which prevents settling of removed dirt particles under their own weight. In re-deposition of soiling matter on a fabric in a washing machine, the relatively slow process of sedimentation is only of minor importance. The real cause of re-deposition is the energetic collision of suspended dirt particles with the fibers of the load under such conditions that the force of adhesion on contact is greater than can be overcome by what may be termed the "re-washing power" of the detergent solution.

The suspending power of various solutions has been measured in terms of degree of deposition of ilmenite black on small cotton test pieces. Some alkalies decreased the suspending power of water, and some increased it. Among those which reduced suspending power were caustic soda and soda ash; among those which increased suspending power were certain sodium phosphates, waterglass, and sodium metasilicate. It was found that a solution of sodium metasilicate, waterglass, sodium hexametaphosphate, and sodium pyrophosphate, each possessed a suspending power equal to that of a corresponding soap solution. Sulfated products, although excellent wetting agents in general possess relatively poor suspending power, -much inferior to that of soap.

One aspect of cleansing wool is its sorption of detergent from solution. Wool has a very high affinity for soaps and alkalies. It is impossible to remove them completely even with many rinses in clear water.

Laundry Applications

It was once customary to have a "break" with cold water to which one or two ounces of soda ash had been added. The idea was that this procedure removed loose soil and neutralized acid, thus preventing splitting of the soap molecule when it came into contact with the soiled fabric. In the newer method, soiled goods are introduced directly into a soap solution which is prepared in the washing machine. This gives a more rapid rate of wetting. No alkali is added in the break, since addition of alkali to a soap solution increases the surface tension of a solution against air. Because wetting out first involves displacement of air from the interstices of the fabric. such an addition would slow down any rate of wetting.

Most soil is acidic and contact with the soap solution results in deposition of acid soap or fatty acid locally. In order to make deposition of acid soap general, the pH of the solution is reduced to about 8.5 for a short time. Acid soap is surfaceactive toward grease, and consequently it intermingles with the film of grease present in the soil. The pH of the wash liquid is next raised to about 11 by addition of a suitable alkali such as sodium metasilicate. This causes resaponification of the acid soap in situ which results in the almost complete and instantaneous removal of the greasy soiling matter.

In addition the interfacial tension of the soap solution is lowered, which contributes to the ease of soil removal. Also use of an alkali such as sodium metasilicate does not impair the high suspending power of the soap solution, so that the removed dirt is kept in suspension and discharged from the washing machine

By careful study of the application of such principles, it has MAYPON MAYPON MAYPON MAYPON MAYPON

for sudsing and deterging purposes...

MAYPON SUPER K

MAYPON K

Household Industry

PROTEIN - FATTY ACID - CONDENSATION PRODUCT USE...

MAYPON 4C for Cosmetics

MAYWOOD CHEMICAL WORKS

Samples and Literature

MAYPON

MAYPON

MAYPON

MAYPON

MAYPON

been possible to devise processes which have resulted in the saving of some 40 per cent of the soap used in older methods, and to reduce the time of the process by about 30 per cent. Work of an excellent quality is produced without damage to the fabrics. Such a process represents the practical application of scientific methods to commerical practice. F. C. Harwood, J. *Textile Inst.* 39, P5 13-25 (1948).

nen

Trend to Clad Steels for Soap Plant Equipment

ARIOUS alloys and other materials are used in processing fatty acids and in making soap, according to the nature of the substances being dealt with.

Fatty Acids

The trend is away from use of copper and high-copper alloys, especially in the final processing of soap where possible contamination of the product with copper compounds is considered objectionable. However, copper is still used to some extent for bubble towers in stills for crude fatty acids.

The process which bids fair to dominate developments in fatty-acid treatment is continuous, counter-current high-pressure, high-temperature splitting. Stainless steels and modern techniques have been used in high-pressure equipment. Aluminum is used at low pressures and temperatures.

The only satisfactory lining material for sulfuric-acid washing tanks is lead. Saponifying tanks employ either lead or copper linings. Unlined tanks may be used if made of the best grade of cypress. The most recent installations have been fabricated from Type 316 stainless steel, Monel, or nickel. For the sweet water, ordinary cast iron plates are suitable in the filter presses, while for the fatty acids an aluminum or silicon alloy has performed satisfactorily. Tin-covered copper is not satisfactory as frequent retinning is necessary.

With regard to the valve problem, brass gate valves appear to be most used. Although the cause of considerable trouble, they are generally thought to be as good as anything obtainable. Replaceable seats and gates are said to be worthwhile economy. "Tellon" seating disks have been used in globe valves and needle valves with excellent results, since they resist corrosion in fatty acids at 400 °F.

Soap

There is an increasing trend toward use of stainless steels, nickel and its alloys, and other special materials, especially in the manufacture of high-quality white soap such as white floating soaps, flake soaps, and toilet soaps. Elimination of any possibility of iron contamination resulting from use of steel equipment, or copper contamination resulting from copper or copper alloys, avoids off-colorsoaps, and development of change in odor, and development of rancidity.

For yellow and laundry soaps, some manufacturers have found rolled steel satisfactory for soap kettles, others prefer flanged steel plates with the courses made of nickel-clad or stainless-clad steel. Cast iron or steel plate wears well for crutchers and agitators, although some are now using stainless steel.

For filters, cast iron or cast aluminum is used. The pumps in laundry soap plants are fabricated from cast iron with "Ni-Resist" or Monel metal trim. Some plants prefer acid-resistant bronze for handling slightly acid conditions and high-silicon iron for strong acid washing. For soap, lye, and grease pipelines, wrought iron of all-welded construction is recommended. Crutchers, cutters, mixers, dies, pipelines, wrapping tables and much other equipment has been installed in Type 316 stainless steel, nickel, or other resistant metals.

Drying is an important operation in making flake soap, and conveyors are generally employed for this purpose. The use of stainless steel woven-wire belts for conveying flakes through the dryer prevents discoloration. For doctor blades on drying or chipping rolls, several plants use cold rolled 34 hard "Inconel" strip running against stainless steel and chromium plated rolls. Soap solutions in some plants are handled in "Worthite" equipment. Chem. Engineering 55, 103-4, 111-12 (1948).

Synergistic Antioxidants

Mixtures composed of acidic inhibitors and phospholipides are highly effective as inhibitors of rancidity of fats and oils, and to a greater degree than either substance alone. Fat-soluable monoesters of ascorbic acid and of fatty acids are useful as the acidic ingredient. R. W. Riemenschneider and J. Turer, to the U. S. U. S. Patent No. 2,440,383.

Bleaching Clay

An investigation was made to examine the properties of five types of absorptive clays, to correlate these with bleaching capacity, and to develop a better method for evaluating them. The declorizing capacity of any given clay increased as its absorbed moisture-content decreased. South Carolina Kaolin had a much lower moisture content than Fuller's Earth or raw clays. D. W. Ross, U. S. Bur. Mines, Repts. Invest. No. 4295, 26 pp. (1948).

Oleate Color Reaction

The sulfate or chloride of Nile blue produces a red color with neutral fats and a blue color with soaps. At pH 12, Nile blue turns red, but in the presence of soaps such as the oleates, a complex is formed which raises the point of color change to pH 13. This reaction detects as little as 0.2 mg. of sodium oleate in a volume of 10 ml. It does not take place in the presence of alcohol or acetone. The color is proportional to the amount of oleic acid present and can be used for colorimetric determinations. R. Goiffon, Ann. biol. clin. (Paris) 6, 282 (1948); through Chem. Abs.

IT'S WORTH MONEY IN YOUR POCKET IF YOU HAVE ANSWERS TO THESE QUESTIONS!

- How can you make a liquid soap which will not cloud in a glass container?
- How can you inhibit odor development after using rug and upholstery shampoos?
- How can you formulate a really good hard water soap that will not form scum?
- How can you prepare clear liquid alkali detergents, superior dairy cleaners?
- How can you formulate sanitizing and disinfecting agents that are not affected by hard water?

WE CAN GIVE YOU THE ANSWERS IN

SEQUESTRENE*

available as the technically pure acid (for making potassium and amine salts), disodium and tetrasodium salts of

HOOCCH₂

NCH₂CH₂N

HOOCCH₂

CH₂COOH

WRITE FOR SAMPLES TODAY

Literature available:
Technical bulletin: SEQUESTRENE (22pp)
Technical bulletin: Effect of Sequestrene on Soap detergency.
Reprint: Organic sequestering agents: Their use in soap products (Soap & Sanitary Chemicals 24:57)



*U. S. Patents 2,130,505 and 2,240,957

ALROSE CHEMICAL CO.

Manufacturing and Research Chemists

BOX 1294 D . PROVIDENCE 1, RHODE ISLAND

PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

ALVES receive less attention and more abuse than most appliances. In many plants valves are such commonplaces that it is taken for granted that they will operate indefinitely without attention. Even when they do not work, makeshift repairs are attempted, such as the common one of tightening down the stem with a wrench or with a piece of steel put through the wheel web. In a majority of plants it is possible to inspect piping and find valves out of order, not only on processing operations, but on steam and hot water heating systems as well.

The reason for valve neglect is due mainly to improper maintenance. Valves break down for several reasons. Among the more common are improper size on steam lines causing wire drawing, corrosion, infrequent packing, tightening too strongly, using the wrong style valve for a particular type of work, keeping a valve closed so long so it freezes, and corrosion due to improper use of metal or alloy. In these days when steamfitter's wages are extraordinarily high and the cost of valves is inflated, it is good sense to economize by regular inspections of all valves. Minor defects should be repaired promptly. As we stated above valves are too frequently overlooked, while other equipment regularly is gone over, oiled and repaired in well run plants.

While we are on the subject of valves, it is of interest to consider them a bit more fully. The soap, insecticide and sanitary chemicals fields are important users of many types of valves and cocks. These are used to control the flow of liquids, air or other gases, particularly steam.

The most frequently used valves comprise globe valves, gate valves, check valves, butterfly valves, float valves, pressure reducing valves and safety valves. If one takes into consideration the construction differences; the special purpose for which valve is designed; the metals,



DR. THOMSSEN

alloys and other materials used: how the valves are actuated and similar considerations, a treatise too long for our purpose could be written, especially if we went into all the details. It is of importance that production and maintenance men use proper discretion in selecting the valves. It is not too uncommon an occurrence to find even the simpler installations made improperly. A globe valve is used where a gate valve is indicated and an iron body valve is used on corrosive fluids because a bronze or alloy valve is more expensive. One often finds a single valve installed where two valves, such as a check and globe valve are necessary for economical, safe operation of a process. A common error is the absence below a globe valve of a quick opening gate valve to control the steam flow into an open boiling coil. The gate valve breaks the vacuum formed when steam is closed off and prevents the consequent filling of coil with the condensed liquid which, upon cooling, may freeze and clog the piping. In the same

type of installation, a smaller bypass valve is good economy to control steam once the open coil heats up the mass. Wire drawing is prevented and better steam flow control is obtained by the use of a smaller by-pass valve in conjunction with the main valve. Too often valves are badly corroded by the materials flowing through the piping. We have frequently noted corrosion proof piping equipped with bronze valves when corrosion resistance valves of other alloys should have been used. With valves available of so many alloys, as well as glass, graphite, stoneware and plastic, such an oversight is inexcusable. These are but a few of the faults to be found in plants.

The terms valves and cocks are synonymous. However, it is customary to refer to a cock as a valve body containing a tapered plug opened and closed with a wrench instead of a wheel. If the valve has a T wrench attached, it is also called a faucet. Cocks are used mainly to control the flow of liquids. The more common types are the plug cocks, the lubricated plug cocks and the asbestos packed cocks. Of these, the ordinary plug cock is used most often. Plug cocks are available as two-way, three-way and four-way types. They are not only cheaper than valves, initially, but when used in three and four-way installations, they economize on both labor and pipe fittings. Many plants prefer plug cocks to gate valves, even though plug cocks are subject to more frequent leakage and sticking. To overcome sticking, especially on alkalis, the Nordstrom and Porter lubricated plug cocks are desirable. They contain an internal lubricant which is released by turning an external screw. The tapered plug is thus lubricated under great pressure and the film causing the freezing or sticking is removed. In the Porter valve the vertical lube grooves are set 180° apart so that they are never exposed to the ports. The Nordstrom cock assures a positive seal around the ports by using grooves in the plug connecting with grooves in the body, thereby preventing any leakage



of Distinctive Excellence

Gardenia Royal C

Hyacinth S

Jasmin Agra

Lavender Fixative

Muguet Longchamp S

Woodsprite

Sandal B

POLAK & SCHWARZ INC.

667 WASHINGTON ST., NEW YORK 14, 400 W. MADISON ST., CHICAGO 6

beyond the port boundry. Both of these valves are very useful.

Asbestos packed cocks are frequently used as blow off valves on steam boilers. They are more expensive than ordinary plug cocks but do not leak as frequently and are more durable. Asbestos packed cocks are less likely to stick and are preferred to plug cocks for liquids which may cause freezing. When they wear out they cannot be ground in like a plug cock but must be repaired at the factory.

The choice of proper valves and cocks, coupled with more attention to them once they are installed, are details that production men and maintenance crews should not overlook.

Hercules Pamphlets

FROM time to time we receive the four-page pamphlets issued by Hercules Powder Co. Wilmington, Del. They are brief, yet very informative. Recently, the writer read one titled "Insecticides and Disinfectants." On one of the four pages of this attractive circular 11 Hercules products are described. The information is so abstracted that the busy man can gain the basic information he desires regarding these products. Fuller details are then available upon request. We often wonder why so many suppliers are so long winded in describing their products in the first approach. They could borrow a leaf from Hercules Powder pamphlets and do more effective sales work in our opinion.

Among the Hercules products described in this pamphlet are "toxaphene," "Thanite," casein, pine oil, Dresinates and "Staybelite" resin.

Tube Closure

VIVID illustration of the ef-A ficacy of "Westite" collapsible tube sealing is presented in a recent issue of the house organ of F. J. Stokes Machine Co., Philadelphia. A man is shown jumping on a "Westite" filled tube. It is pointed out this is possible because the seal is four times as strong as conventional closures. "Westite" sealed tubes can be produced on conventional tube filling and closing machines. The seal is made by coating the tubes

at the open end with a thermo setting inert adhesive. Then instead of crimping the filled tubes in the usual manner, heated jaws are employed to hermetically seal the tube. Troublesome leakages due to the creeping of glycerine and oils or volatile substances like alcohol and acetone are said to be prevented with "Westite" sealed tubes.

Vacuum Dry Fillers

THE mechanical division of General Mills, Minneapolis, Minn. is featuring their line of "Vacuflow" fillers more extensively. Three models are offered. "Model E" fills bulk containers up to 200 lbs. capacity to precise weights. "Model D" handles a large variety of products for small or medium sizes semiautomatically. The rotary model fills up to 300 packages per minute. Cans, jars or bottles are handled, fully automatically, with eight, 12, 16 or 24 filling heads. An intermittent vacuum draws the powdered substances into the containers. This permits accurate net weight control at high filling speeds. The operations are clean and dustless. Since General Mills are one of the largest users of packaging machinery they have incorporated actual filling experience into these machines.

Pipe Thawer

A GAS torch that has the appearance of a pair of ice tongs yet heats pipe up to 2" in diameter quickly and evenly is offered by Cedarberg Manufacturing Co., Minneapolis. The multi jet gas torch clamps around the pipe and the gas flame circles the pipe's circumference. The torch weighs about two pounds and measures four by 14 inches. It may be laid down while lit. The torch appears to be a handy contraption for plants troubled with frozen pipes not only with water but with other substances such as fats.

Tight Fibre Drums

AKE Laboratories of Clifton ■ Heights, Pa. are offering a fibre drum taping machine that tapes packages up to 17" in diameter. This piece of equipment is semiautomatic in its operation. It has

but one moving part and applies masking type tape to close securely and neatly drums, canisters and cartons.

Chlorine Handling Chart

A new wall chart, "Recommendations for Safety in Use and Handling of liquid chlorine cylinders and ton containers," was issued by Hooker Electrochemical Co., Niagara Falls, N. Y. The 18 x 32 inch chart lists recommendations for storage, handling and use of liquid chlorine cylinders, as well as emergency, first aid and prophylatic measures. The chart is available on request.

New Snell Brochure

Foster D. Snell, Inc., New York, chemical and engineering consultants, recently issued an eight-page booklet, the 12th in a series, outlining the type of research work done and services offered on surface active materials. The booklet, "Surface Activity and Detergency," is available on request.

Pennsalt Sanitation Folders

A new series of six leaflets on products for the dairy and allied industries was prepared recently by the B-K division of Pennsylvania Salt Manufacturing Co., Philadelphia. The company's soapless washing powder for home, restaurant and dairy use; its bactericides in liquid and powder forms; a can cleaning alkali product; bottle washing compound for use in washing milk bottles, and the firm's calcium hypochlorite product for chlorination and sanitation are discussed in the folders, which are available to users by writing the concern at 1000 Widener Bldg., Philadelphia 7, Pa.

Surface Active Compounds

A new, 75-page technical brochure on its emulsifiers and other surface active agents was published recently by Hercules Powder Co., Wilmington, Del. In addition to several chapters on application of surface active agents to various industries, and background information, the book contains the first.

COWLES CHEMICALS

DRYMET*

The Economical Detergent Silicate

Cowles DRYMET is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both NA₂O (alkalinity) and SiO₂ (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

The All-Purpose Detergent Silicate

Cowles DRYSEQ, anhydrous sodium sesquisilicate equivalent, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na₂O—making it an economical base material for compounding.

DRYORTH*

The Heavy-Duty Detergent Orthosilicate

Cowles DRYORTH, of itself, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na₂O, which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET*

The Medium pH Pentahydrate Sodium Metasilicate

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular product with the normal 42% water of crystallization. Sugested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble — chemically stable—easy to handle. Can be used on medium pH jobs.

*Reg. U. S. Pat. Off.

We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

PROMPT SHIPMENTS FROM CONVENIENT WAREHOUSE STOCKS

Cowles Chemical Company

HEAVY CHEMICAL DEPARTMENT

CLEVELAND 3, OHIO

exposition of a new method of selecting emulsifiers for a given application. By use of the new "Atlas HLB" system, according to the booklet, the time and labor required to determine a suitable emulsifier will be greatly reduced. The new method is based on empirical "HLB" numbers representing the balance between hydrophilic and lipophilic portions of the emulsifier molecule. There is a chapter on detergents and another on the use of surface active agents in insecticides. Copies of the brochure are available for \$1.

Verona Chemical Price List

The Aromatics Division of Verona Chemical Co., Newark, N.J., recently issued a price list on its complete line of aromatic chemicals. The six-page, two-color folder, which is $8\frac{1}{2} \times 11$ inches, contains a number of new items, developed over the past few years in the company's research laboratories.

Truck and Basket Folder

W. J. McElmoyl Co., Groveville, N. J., recently issued a fourpage folder on its line of baskets, push trucks and hampers. Various styles, sizes and types of equipment for stores, laundries, factories, institutions, office buildings, warehouses and restaurants are illustrated and described with dimensions in the folder.

Sample Stone-Marshall Kits

Chemiatric Corp., Sparta, N. J., sole distributors of Stone-Marshall test paper for quaternary ammonium compounds are making available sample kits of 16 test papers. A folder describing the papers and the method of use, as well as the background for the idea, is included.

Monsanto "Penta" Folder

Monsanto Chemical Co., St. Louis, recently issued a 16-page, two-color booklet on the company's wood preservative, "Santophen 20" (pentachlorophenol, technical). Physical and chemical characteristics of the product and methods of application and manufacture are described in the illustrated booklet.

Florasynth Issues Catalog

Issuance of its 1949 price list and catalog was announced dur-



ing February by Florasynth Laboratories, Inc., New York. The 28-page catalog, which is printed in three colors, contains a complete listing of the company's line of essential oils, aromatic chemicals, flavoring materials, food colors, etc. Prices and suggested uses are given. The addresses of branch offices in various cities in the U.S., and foreign affiliates in Canada and Mexico are given. The firm also represents Schmoller & Bompard of Grasse, France, in the U.S. and Canada. Copies of the catalog are available on request.

Kalusoff Washing Folder

Kalusoff, Ltd., Springfield, Ill., recently issued an eight-page circular on "Effective Dish and Glass Washing." The folder deals with methods of washing and rinsing and the visual method of determining bacteria count.

Mathieson Chemicals Booklet

A new, 32-page, illustrated booklet, "Mathieson Chemicals," was published recently by Mathieson Chemical Corp., New York. Information is given on methods of production, properties and applications of caustic soda, soda ash, bicarbonate of soda, liquid chlorine and various specialties. Also included is a description of the recently developed stationary mercury cell for the production of chlorine and caustic soda.

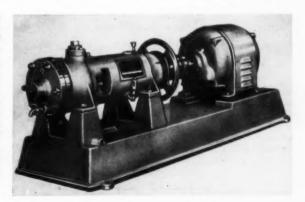
Chem. Development Folder

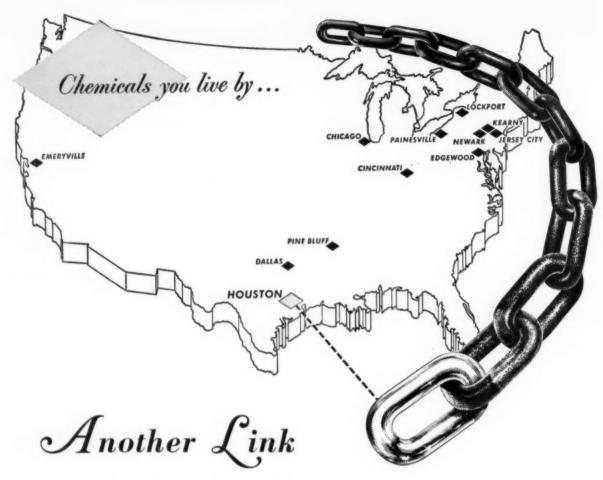
Robert S. Aries & Associates, consulting engineers and economists, Brooklyn, recently issued a four-page folder describing their plan for commercial c h e m i c a l development. Copies are available.

New Colloid Mills

A new line of "Charlotte" colloid mills was announced recently by G. M. T. Colloid Mill Corp., New York. The new mills feature a radially grooved rotor and stator, which simultaneously subjects the material to be processed to hydraulic shear and mechanical impact. The material to be processed is introduced at the end of the rotor's greatest diameter, and is forced between the opposing faces of the rotor and stator by grooves in the rotor. Following the period during which the material is retarded on the working surface for processing, it is then discharged into the annular space behind the smaller diameter of the rotor, from which it may be piped.

At right: New "Charlotte" colloid mill announced recently by G.M.T. Colloid Mill Corp., New York. New line features oversize bearings and shafts, micrometrically calibrated handwheel for external adjustment for clearances up to .001, and entirely separate bearing and material chambers to prevent contamination.





. . . in Diamond's chain of plants to serve the soap industry better

Soapmakers now have *four* sources of Diamond Caustic Soda, with the opening of Diamond Alkali's big, new electrochemical plant near Houston, Texas.

This is the newest link in Diamond's expanding chain of producing centers paralleling the country's industrial—and soapmaking—development. It gives you a greater and more flexible supply of caustic soda—fits in with Diamond's

other facilities producing soda ash, silicate of soda and sesquicarbonate of soda for the soap industry.

Back of this dependable source of supply is an aggressive research organization and a Technical Service Division which have been developed to help you with your chemical problems. Why not get acquainted with your nearest Diamond Sales Office or write us direct?

DIAMOND ALKALI COMPANY

Cleveland 14, Ohio

Diamond Sales Offices in Boston • New York • Philadelphia Pittsburgh • Cleveland • Cincinnati • Memphis • Chicago St. Louis • Wichita • Oklahoma City and Houston



SOAP PLANT OBSERVER

By John W. McCutcheon

NEW type non-ionic detergent was found eminently successful as a window and car washing compound by recent tests made at the writer's laboratory. Determination of the exact action will require further investigation; but it would appear that the detergent is not too free rinsing so that after the initial wash a film clings to the metal or glass surface long enough to prevent direct water to glass or metal contact. After use of this detergent the car and windows require little wipe down. Since the non-ionic is a liquid and non corrosive there is no harm in allowing traces to be left on the surface. Thus, rinsing may be stopped sooner than otherwise would be possible. The research departments of several companies have been investigating this angle of detergency.

THE need for standardization of evaluation methods in the synthetic detergent industry has been made the subject of this column on previous occasions, (November, 1948) and was keynoted in the address of Dr. J. C. Harris of Monsanto Chemical Co. before the recent annual meeting of the Association of American Soap & Glycerine Producer in January.

The variations noted in the launderometer test in four fairly recent reports was made the subject of an investigation. The tests and variations are noted below:

- (1) "Evaluation Methods." A.S.T.M. Bulletin #141, August, 1946.
- (2) "The Application of Carboxy Methyl Cellulose to the Wet Processing of Textiles." American Dyestuff Reporter, September, 1948.
- (3) "An Evaluation of Soaps & Synthetic Detergents" by



M. S. Furry et al, American Dyestuff Reporter, November 15, 1948.

(4) "Detergent Action" by O. C. Bacon, J. E. Smith, Ind. & Eng. Chem. V 40 2361 (1948).

Variations in Tests

A. Cloth soiling formulae in each test (as comparative a figure as possible) is as follows:

1	2
"Wesson Oil" 7.	5 gr. Same as
Oil dag. 30.0	0 gr. (1)
CCl ₄ 18 L	iters
3	4
Tallow 27.0 gr.	"Crisco" 180 gr.
Mineral	"Nujol" 258 gr.
Oil 27.0 gr.	Lampbl 60 gr.
Oil dag. 36.0 gr.	Wheat Starch 120 gr.
CCl ₄ 18 Liters	CCl ₄ -not stated

B. Condition of soiling; (3) and (4), moisture control on the raw cloth before soiling. (1) and (2) made no mention of this. (1) held the cloth one day and not over seven before using. (2) held it at least seven days. (3) not under 12-18 hours and not over ten days, (4) not mentioned.

C. Size of strips, used in launderometer. (1)—6 x 6½, (2)

2 x $2\frac{1}{2}$, (3) $6\frac{1}{4}$ x $4-3\frac{1}{4}$ ", (4) not stated.

- . D. Method of agitation-
- (1) 10 rubber balls
- (2) 15-1/8" steel balls
- (3) 10-1/8" steel balls
- (4) varied for specific purpose.

E. Calculation of results—all different.

Certainly a great deal remains to be done in standardizing this test.

CODIUM carboxy methyl cellulose has again appeared in the news but this time as a soap assistant. It is claimed by K. J. Nieuwenhuis (Research Chemist of the Experimental Station for Laundering, Delf, Netherlands, J. Amer. Oil Chemists' Society, Vol. XXVI No. 2 (1949), 51-52) that the soap content of washing powder for laundries can be lowered from 21% to 12% by the incorporation of 1.25% Na-CMC with an accompanying cost reduction of from 9.8c to 8.2c per lb. (on basis one florin = \$0.377). Prices of raw materials in Holland are given as follows (after conversion to U.S. dollars). Synthetic detergent ("Teepol")-32c lb. on basis of 35% active, CMC-94c lb, soap (100% basis)-34c lb. and soda ash-3.7c lb. Although Na-CMC was formerly imported from Sweden, it is now coming into production in Holland.

The writer has not seen supporting data from American research which makes the above findings all the more interesting.

RUG cleaning by the shampoo method has always been a tedious operation. One reason is that the directions usually call for the cleaner to be placed in a basin and whipped to a lather with an egg beater, or what have you, with only the foam applied to the mat or rug. A recent novel device, which came to the attention of the writer, is a small shaker cap having a small metal cylinder in a sleeve. When attached to the cleaning fluid bottle, inverted and shaken vigorously, the metal plunger oscillates in the sleeve and pumps out a stream of suds ready made for application to the rug to be cleaned. The device is simple to

Are your old kettles CORRODING AT THE LIQUID LEVEL?

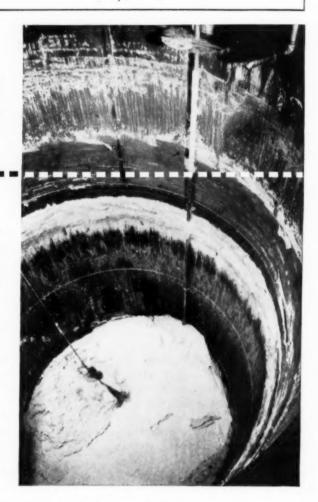
Replace that top section with Lukens Clad Steel

"Except for severe corrosion in the upper ten feet of our old soap kettles, there's still a lot of useful life in them." To those companies, Lukens suggests salvaging kettles by replacing the top ten feet with a new section made of Lukens Clad Steel.

Ordinary steel was used, of course, in old soap equipment. Today we recommend Lukens Nickel-Clad, Stainless-Clad, Inconel-Clad or Monel-Clad according to conditions to be encountered. Equipment will be long-lived, upkeep less, and products safeguarded against contamination.

Soap manufacturers use Lukens Clad Steels in such applications as evaporators, crutchers, filters, hoppers, amalgamators, pressure tanks, plodders, mixers and storage tanks. In glycerine production, evaporator bodies, salt catchers, filters and bleaching tanks of clad steel give excellent service.

Lukens offers you the most complete range of clad steels available—up to 178" wide or from $\frac{3}{16}$ " to over 3" thick. Clad metal is uniformly thick and permanently bonded to steel backing plates. Standard claddings of 10% or



20% of total plate thickness suit most applications.

Bulletins 255 and 338 give additional information. For copies, write Lukens Steel Company, 446 Lukens Bldg., Coatesville, Pa.



SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

. SPEED SCRAP TO THE MILLS TO MAKE MORE STEEL . .

manufacture, cheap in cost and should interest manufacturers of rug shampoo compounds as a premium item. As far as is known, it is not yet on the market although manufacturing facilities are available and trial runs have been made.

SOAP plant is as modern as its adoption of up-to-date engineering practice. Design factors to be considered in erecting and specifying new equipment should include, among other things, considerations of wear, ease of operation, repair and cleaning. For example, and aside from considerations of contamination which will be dealt with later, iron tanks for use in glycerine lye treatment should be at least of 3/8 inch plate to withstand the long years of pitting to which such tanks are subject. Internal bracing should be avoided if possible as it rusts out periodically. Oil storage tanks should have inside and outside ladders to facilitate cleaning. Manholes should be of ample size and located so that they are accessible. Extra side openings help inspection, removal of sludge and repair of foot bearings where present.

In one installation noted, a 10-inch diameter reaction vessel was equipped with a series of eight, two-inch diameter spiral heating coils connected into common headers by flanged joints. For repair or replacement, all that was necessary to replace a coil was to unbolt it and slip it through the circular 28 inch diameter top manhole. Removal of a pancake or large spiral coil would have entailed considerable rigging, and lost operating time. Heating coils held by flanges six inches to 10 inches from the sides of the vessels with six inch spacings are repairable by welding without removal. Also, tanks on cement piers two to three feet off the ground facilitate inspection and repair to bottom outlets. Shape can be a factor of great inconvenience. A cylindrical or oval tank laid on its side instead of on its end may cause untold difficulties in accounting

records of transfer because of faulty calibration, measurements or both. So also the location of pipes and



Above new device for use in making foam for rug shampoo preparations.

valves should be carefully considered. Frequently one sees a large steam pipe running three or four feet below ceiling level. Such an arrangement cuts off a whole section of storage space because there is not sufficient height to permit passage of a lift truck or other moving vehicle under the pipes, requiring an operator to climb two sets of stairs to get at a valve which he may have to turn on and off five times a day is also bad. Factors of this kind lead to what one might call "labor inertia" or an attitude of mind not conducive to good operating practice.

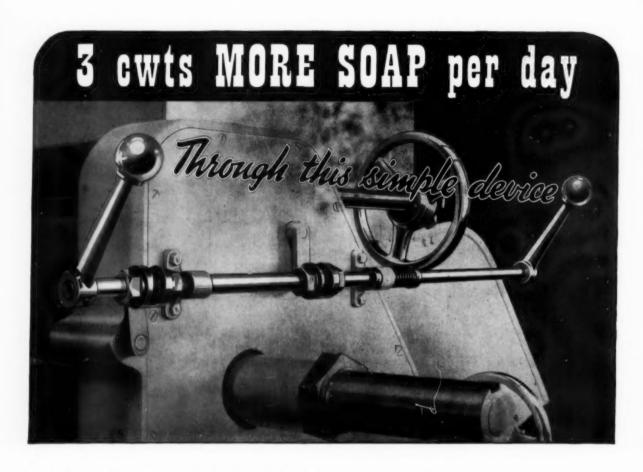
Safety is another important factor closely associated with modern design. All moving gears, belt and chain drives, should be enclosed with devices easily accessible for repair and oiling. Some states require this by law. Slipping is one of the worst hazzards in a soap plant. The use of rough metal treads on stairs, prevention of leaks at valves and unions, open type floor work where possible, are suggested. All steam pipes should be covered, and steam traps located to discharge into proper conduits, not along the floor where a slippery spot will be formed. Acid should be handled with goggles. Valves used in transferring hot or corrosive liquids should have bolted on bonnets. Electric wiring should be permanent and oversize fuses avoided. In one factory noted, all fuses were made non-effective by the use of pennies. The reason given was that the fuses blew out as fast as they were put in. This may be co-incidental, but this factory was the only one brought

to the attention of the writer, where a man had been electrocuted in carrying out his duties.

In no phase of engineering, has there been such developments in recent years as in control equipment. Its liberal use in soap plants is highly recommended. Electrically operated recording equipment may be had for pressure, temperature, humidity, moisture, pH and almost any other measurement desired. Such equipment provides a permanent record for supervisors and operators alike. Recorders may be located at points where they may be more easily read than the ordinary type thermometers, etc. Installation is quick and simple. At more expense, relays may be inserted in the mechanism to ring a bell, turn on a light or close a valve. An example of effective control is the use of lights on covered soap kettles. An argument against such covers is that the soap boiler cannot see where his soap is located and he might boil it over. By installing a relay system at two levels in the kettle, a yellow caution light and a red warning light may be made to flash on when the soap reaches predetermined levels. This type of installation has been in successful operation in one factory for over fifteen years.

The accurate recording of transfers, is another important factor in modern operation. Often this is a measurement of inches transferred by use of a float scale, measuring rod or by a remote tank-o-meter device. This last is best applied to light liquids, and in the soap industry such as refined glycerine, caustic solutions, acids, liquid fats and oils, treated lyes, etc. Where the materials may contain suspended matter such as salt in crude glycerine, soap scum in untreated lyes, etc. the device has its limitations. Flow meters may also be used. One installation was noted where fatty acids were pumped to a crutcher through such a meter which was calibrated to read directly in gal-

(Turn to page 151)



One of many excellent features to be found on the Vickers-Armstrongs toilet soap mill, the inter-connected scraper mechanism saves both time and fatigue. It is fitted on all double hopper mills. Just a flick of the lever from front or rear of the machine and both scrapers are actuated simultaneously. Operation is simplified, wear and tear on the operators' hands is greatly reduced and considerable time is saved between millings. It is reliably estimated that this device increases production by 5%-equivalent to 3 cwts. per day on the large size mill.



007.0

PRODUCTS AND PROCESSES

Soap from Olive Foots

Soaps obtained from neutralization foots of olive oil have a tendency to become rancid rapidly. Decolorizing treatment with calcium hypochlorite or sodium hydrosulfite gives incompletely decolorized soaps. Decolorization with potassium persulfate gives good results, but the soaps must be newly cooked after the treatment to saponify the freed fatty acids. Use of compressed air bubbled into the mixture favors rancidity. Sodium silicate (one per cent) retards the oxidation. Copper salts used as catalysts for the decolorization also catalyze rancidity-producing reactions. F. M. Tomaioli, Riv. ital. essenze, profumi, piante offic., olii vegetali, saponi 30, 166-9 (1948).

Mechanics' Hand Soap

A mixture of quartz sand 73 per cent, fatty alcohol sulfate 15, triethanolamine 7.5, and trichloroethane 4.5 per cent is used to make a heavy-duty hand soap. E. Lorant, Hungarian Patent No. 128, 542; through *Chem. Abs.*

Antiseptic Tooth Paste

A manufacturer of quaternary ammonium compounds has used the following in making an antiseptic tooth paste, formulated as follows:

	%
Quaternary ammonium	
compound	0.25
Foaming agent	1.0
Methyl cellulose	0.7
Glycerine,	8.4
Tricalcium phosphate	5.0
Calcium carbonate	43.0
Flavor to suit	
Water to make 100 %.	

Using the wet filter paper method at 37 °C. and *Staphylococcus aureus* as a test organism, the killing time was found to be two minutes in a 1:8 dilution and five minutes in a 1:50 dilution. The pH of the paste was 8.8. One trouble with

such a preparation is that claims for its antiseptic action have to be so qualified that practically all of the sales punch is taken out of this advantage. It is impossible to sterilize the oral cavity, although the bacterial count can be reduced. For this reason the F.D.A. continues to frown on use of antiseptic claims in a dentifrice. *Am. Perfumer* 52, 397 (1948).

Soap in Dental Paste

A high grade tooth paste is made from the following:

	Parts
Precipitated chalk, light	46.0
Powdered gum	
tragacanth	1.0
Pulverized neutral white	
soap	4.0
Glycerine	24.5
Water	18.7
Powdered soluble saccharine.	0.1
Methyl parahydroxy	
benzoate	0.1
Flavor	0.5
Alcohol	5.0

Mix alcohol and the gum; add hot water, glycerine, soap, saccharine, preservative and flavor. Mix for a half hour. Mix and sieve the dry ingredients and slowly add them to the liquid. Mix until a smooth white paste is obtained, and mill. The consistency of this paste is slightly heavy. It can be reduced by adding water. *Drug and Cosmetic Ind.* 63, 655 (1948).

Low-cost Soap

A mixture of 100 kilograms of fat-containing wastes and 100 kg. of third-class resin is boiled with 100 kg. of water and 10 kg. of 128-30 °Be. caustic soda solution. More caustic is added, then 200 kg. of bentonite, 200 kg. of Neuburg chalk, and 300 kg. of water, each being mixed in separately and the mixture boiled. Finally enough caustic is added to make a total of 20

kg., together with 50 grams of nitrobenzene. L. Grozdits, Hungarian Patent No. 132,267; through *Chem. Abs.*

Speeding Saponification

During the saponification process, soap will dissolve a large amount of fat. It seems probable that the fat penetrates to the interior of the micelles and afterward escapes from these only with difficulty. Saponification is fairly rapid until 80 per cent of the fat mass has reacted. Excess alkali added toward the end therefore speeds up this stage of saponification. Boiling with steam also increases the rate of reaction.

One procedure is to add dilute caustic solution until a thin flowing paste is formed. After this, hot water is added until the mass again becomes thick and compact. Addition of water decreases the attraction between individual soap micelles so that the enclosed fat has a chance to escape and react. The mass is covered and allowed to stand overnight, when a good deal of its heat will be retained. Complete saponification should result. H. Zilske, Seifen-Ole-Fett-Wachse 74, 219-21 (1948),

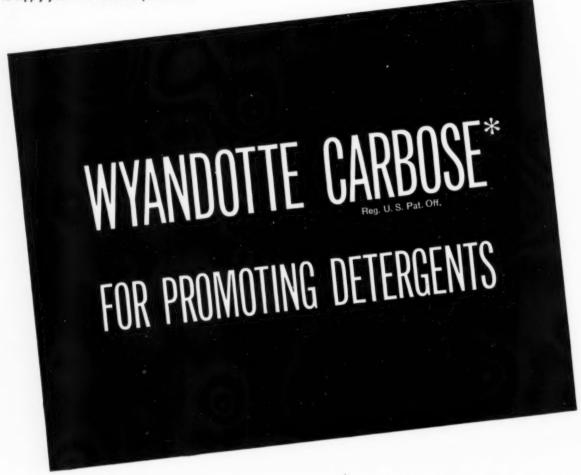
Semi-micro Soap Analysis

A procedure for the complete semi-micro analysis of soap has been developed. Semi-micro methods are valuable in research work and in legal cases where limited quantities of sample are available. In general, the analytical results obtained on a semi-micro basis and on a micro basis are comparable. Very little special apparatus is required, and most of the procedures employed present analogies with the usual methods of soap analysis. E. W. Blank, J. Am. Oil Chemists' Soc. 25, 438-46 (1948).

Shoe Cream

Refined turpentine oil, five parts by weight, is mixed with two parts of shoemaker's wax, and 0.25 part of refined lacquer dye. The whole is heated on the water bath to give a shoe cream. J. Malya, Hungarian Patent No. 131,287 through Chem. Abs.

As the result of four years of intensive research, specially developed production processes and hundreds of laboratory and field tests, Wyandotte Chemicals Corporation is ready to supply you with increased quantities of



*Specialized grades of SODIUM CMC

Wyandotte Carbose has proved its great value in increasing the effectiveness of both "built" and "unbuilt" detergent products. When incorporated in synthetic detergent formulations, small amounts of this unique compound promote detergency to a degree heretofore unattainable.

Thousands of tests on cotton fabrics show that Carbose increases soil removal and whiteness retention . . . helps prevent soil redeposition.

Detergents containing Carbose are already being used in several hundred commercial laundries. Excellent results have been obtained not only with cotton but with all classes of fabrics and with soils running from the lightest to the heaviest.

Carbose offers important advantages in a wide variety of other applications — such as water-base paints, textiles, paper and adhesives.

Wyandotte Carbose is economically priced and is available in carload quantities. If you would like to investigate what it can do for your product, simply ask your Wyandotte Service Representative for samples and complete information.

Wyandotte Chemicals Corporation
Wyandotte, Mich. • Offices in Principal Cities

SODA ASH . CAUSTIC SODA

CALCIUM CARBONATE . CALCIUM CHLORIDE

CHLORINE . HYDROGEN . DRY ICE

SYNTHETIC DETERGENTS . GLYCOLS

ETHYLENE DICHLORIDE

PROPYLENE DICHLORIDE . CHLOROETHERS

AROMATIC SULFONIC ACID DERIVATIVES

OTHER ORGANIC AND INORGANIC CHEMICALS



PATENTS

Conducted by Lancaster, Allwine & Rommel

PATENTS, TRADEMARKS AND COPYRIGHTS

402 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired to Lancaster, Allwine & Rommel.

No. 2,457,957, Insecticidal Composition of Pyrethrins and 3, 4-oxymethylene-phenyl-1-butylglycol Synergist, patented January 4, 1949 by Herman Wachs, Brooklyn, N. Y., assignor, by mesne assignments, to U. S. Industrial Chemicals, Inc., New York, N. Y., a corporation of Delaware. An insecticidal composition is covered, the active insecticid-

al ingredients of which comprise pyrethrins and as a synergist therefor, 3, 4-oxymethylene-phenyl-1-butylglycol.

No. 2,458,017, 1-Phenylethylidenemalononitrile, patented January 4, 1949 by David T. Mowry, Dayton, Ohio, assignor to Monsanto Chemical Company, a corporation of Delaware. A solution containing 1-phenylethylidenema-lononitrile is patented that is suitable for insecticidal purposes.

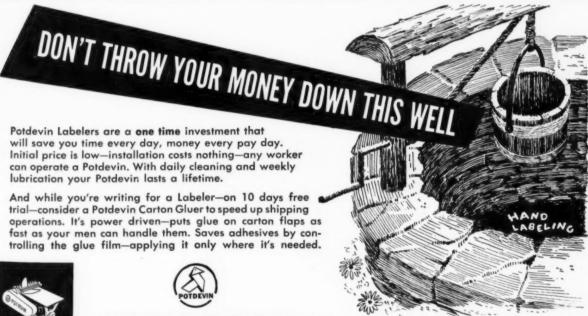
No. 2, 458,170, Continuous Fat Splitting, patented January 4, 1949 by Martin Hill Ittner, Jersey City, N. J., assignor to Colgate-Palmolive-Peet Comassignor to Colgate-Palmonve-Peet Company, Jersey City, N. J., a corporation of Delaware. The patent covers the method of hydrolyzing fats and fatty oils with water to fatty acids and glycerine, with the aid of heat and pressure, which comprises intimately contacting such fatty material with water by countercurrent flow, sub-jecting the fatty acids resulting therefrom to partial cooling by direct contact and mixing with water whereby the water is heated, applying additional heat to the water while mixed with a portion of said fatty acids, and passing the water thus heated into intimate countercurrent contact with the fatty material undergoing hydrolysis, while maintaining two liquid phases, a fatty phase and an aqueous phase,

whereby the fatty material undergoes substantial hydrolysis with the formation of fatty acids and glycerine.

No. 2,459,138, Nicotine and Beta-Beta-Dichlorethyl Ether Insecticide, patented January 18, 1949 by Owen T. Coffin and David J. Raden, Los Angeles, California, assignors to Swift & Company, Chicago, Ill., a corporation of Illinois. The patent covers an insecticide comprising nicotine and beta-beta-dichlorethyl ether; said nicotine and said beta-beta-dichlorethyl ether being present in a sufficient amount to provide, as compared with the separate insecticidal properties of the components, an improved insecticide of the components, an improved insecticide that is effective over a longer period of time, that is effective under acid conditions, and that retains a greater insecticidal property at lower temperatures.

No. 2,459,708, Dispersions of Pro-teins in Aqueous Detergents, patented January 18, 1949 by Harold P. Lundgren, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture. A composition is covered consisting essentially of an aqueous dispersion of approximately equal parts by weight of a protein and a detergent selected from the group consisting of alkyl aryl sulphonates and alkyl sulphates. A aryi sulphonates and alkyi sulphates. A composition is also patented consisting essentially of an aqueous dispersion of substantially equal parts of egg white solids and sodium isopropylinaphthalene

(Reissue 23,080, Lethal Composition for Insects), reissued January 25, 1949, Howard W. Eck, deceased, late of East Lansing, Mich., by Lowell B. Kilgore





MACHINE CO.

1256-38th Street Brooklyn 18, N.Y.

and de	send mo	Potdevin	vin Labele Carton Gli	er on 10 pers.	days	free	trial —
Name	and Title				*****		
Compa	ny	***************************************			***********		
			**************		******		
Street							



(A) Automatic

The U. S. Sanitair air-cleans up to 130 containers per minute and may be synchronized into any production line.

Into any production line.

Two complete revolutions of every container for each revolution of the machine provide double cleaning time at normal operating speeds . . . in half the usually needed working space. Produces the most thorough cleaning action and insures the most economical use of compressed air. Foreign matter air-forced from containers is collected in easily removable bag.

Handles all sizes of containers from AGST bottles to wide mouth containers . . . requiring only a ten-minute adjustment for change from one container size to another. Our "Sanitair Bulletin" describes all details; write for it today.



(B) Semi-Automatic

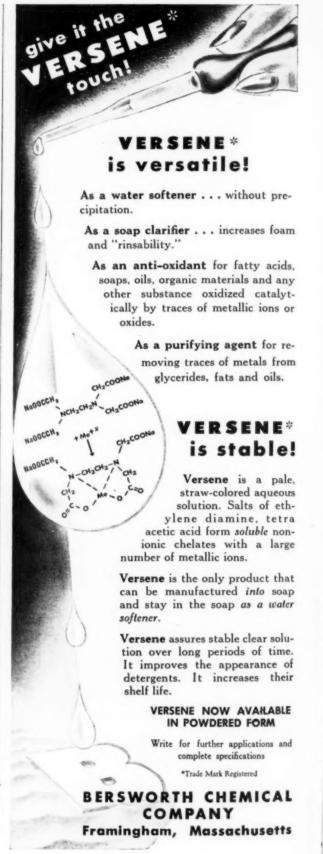
The E-Z Two-Tube Air Cleaner for cleaning new glass, is automatic in operation except for manual placing and removing of containers. As a two-tube machine it handles two containers at a time. The instant the inverted container contacts the machine, a blast of compressed air efficiently removes all foreign matter from the container. Requires no skill for efficient operation.

Furnished with air filter ready for connection to customer's air lines. Portable, equipped with cord and plug for attaching to electric circuit. Floor space required only 27 x 14 inches. Write for Model E-Z Bulletin.

U. S. BOTTLERS MACHINERY CO.

4019 NORTH ROCKWELL STREET

CHICAGO · 18 · ILLINOIS



and Helen Ford Kilgore, Washington, D. C., assignees, and Jared H. Ford, Kalamazoo, Mich. No drawing. Original No. 2,310,949, dated February 16, 1943, Serial No. 266,035, April 4, 1939. Application for reissue August 8, 1947, Serial No. 767,602. An insecticide is patented comprising an insect-paralyzing agent intermixed with a compound of the type:

wherein R is a hydrocarbon radical, the compound serving to impart lethal qualities to the insecticide. Also covered is an isecticidal composition of matter comprising a compound of the type:

wherein R is alkyl containing at least four carbon atoms, the compound serving to impart lethal qualities to the composition, and a carrier therefor.

No. 2,459,818, Soap Product Containing Guanidine Stearate, patented January 25, 1949 by Lloyd F. Henderson, Reading, Mass., assignor to Lever Brothers Company, Cambridge, Mass., a corpora-

tion of Maine. A solid, all-soap product for washing with water is covered, consisting essentially of an unfilled alkali metal soap and one to 15 percent by weight of guanidine stearate.

No. 2,460,188, Fungicidal Compositions, patented January 25, 1949 by Walter C. O'Kane, Durham, N. H., and Glen H. Morey, Terre Haute, Ind., assignors to Commercial Solvents Corp., Terre Haute, Ind., a corporation of Maryland. A method for suppressing parasitic fungus growths on living plants is described which comprises bringing into contact therewith a kojic acid salt of a divalent heavy metal, said heavy metal having a specific gravity between seven and fourteen.

Lever Names Scribner

Howard A. Scribner, special accountant in the finance division of Lever Brothers Co., Cambridge, Mass., has been appointed assistant comptroller of the company's Pepsodent Division, Chicago.

U. K. Soap Exports Up

So a p exported from the United Kingdom in the first six months of 1948 totaled 27,173,000 pounds, compared with 15,006,900 pounds in the corresponding period of 1947. In the prewar year, 1938, exports for the same six months period totaled 36,311,400 pounds.

New Schimmel Briefs

New soaps for shaving preparations, a shaving cream, a hand lotion and tooth paste are among the items discussed in *Schimmel Briefs* No. 164, external house organ published monthly by Schimmel & Co., New York. Formulas for each of the products and their chemical composition are given. Copies are available from the company.

Duffy Joins Turner

Joseph Turner & Co., Ridge-field, N. J., announces the appointment of James Duffy as manager of its export department. Mr. Duffy was formerly associated with the Riches-Nelson Co. and the American Cyanamid Co., New York.

Shippers Name Lever Man

Robert J. Smith, traffic manager of the Hammond, Ind., plant of Lever Brothers Co. was recently elected a member of the executive committee of the Midwest Shippers Advisory Board, whose headquarters are at Chicago.

CRESYLIC ACIDS

Barrett* Cresylic Acids are especially valuable in textile scouring compounds for removing natural greases and paint from raw wool. These standardized mixtures of tar acids, including cresols, blended to meet particular commercial requirements, are also widely used in the production of commercial disinfectants and metalcleaning compounds.



FOR SOAP AND SANITARY CHEMICALS

U. S. P. CRESOL CRESYLIC ACIDS U. S. P. PHENOL TAR ACID OILS NAPHTHALENE PARACHLOROMETACRESOL PYRIDINE XYLOL HI-FLASH SOLVENT ANHYDROUS AMMONIA



THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

*Reg. U. S. Pat. Oh.

METAL CLEANERS

(From Page 46)

cleaner is converted to a stable emulsion by colloid milling, or if the identical formulation is prepared, using the stable emulsion technique, the effectiveness is lost.

In another series of tests, Formulation No. 2 was used as a diphase cleaner in a small commercial spray washer. This formula has been used extensively in industrial metal cleaning. The solvent: water ratio was 1:30. The test panels consisted of pieces cut from sheets of cold rolled steel plate which had been obtained directly from a rolling mill. The soil on these panels was a tough adherent film of the lubricants and coolants used in the rolling process, plus fingerprints, oil, grease and dust, which had been picked up during handling and shipping.

Several plates cleaned in this way with the diphase cleaner required an average of 25 seconds to render them clean and bright, as determined by visual inspection. To study the effect of increasing the stability of the emulsion, further quantities of triethanolamine oleate were added to the cleaning bath. Each such addition caused further emulsification of the solvent in the aqueous layer, and reduction in the proportion of free solvent. Coincident with this, cleaning action became less effective, and greater lengths of time were required for adequate cleaning. Finally, when enough soap had been added to emulsify substantially all of the solvent, it became impossible to clean the plates properly. They were hazy in appearance with a heavy visible throwback of soil.

Dispersing Power

DIPHASE cleaners suitably formulated show a much greater tendency to deflocculate and suspend soil, than do stable emulsions. Ability to disperse soil is an important characteristic of all good detergents in whatever field. Although a solution may be able to wet soil and detach it from the surface to be cleaned, if it does not effectively

disperse and suspend it, redeposition often occurs and part of the soil may be redistributed more or less evenly over the surface. This is known to occur with metal cleaning by alkali baths and emulsion baths. Frequently an overflow tank is used to remove most of the loose soil which detaches from metal surfaces and floats to the top of the bath.

The very high dispersing power of soap in solution is largely destroyed in the presence of emulsified solvent. The low dispersing power of stable emulsions must be attributed to the soap being substantially tied up at the surfaces of the emulsified droplets, and to hydrolysis. Thus the concentration of soap available in aqueous solution must be very small. But when the diphase technique is used, very little solvent is emulsified and a substantial quantity of soap remains in the aqueous solution. In order to obtain maximum dispersing power for soils the conditions of making and using the cleaning baths must be such as to cause minimum emulsification of solvent in the aqueous phase. Adding free solvent to an emulsified product will improve initial cleaning results, but will not raise the dispersing power of the aqueous solution.

Usually some mechanical assistance is needed to aid ordinary cleaning solutions in dissolving or loosening and removing soil-in the form of agitation, spraying, or even slow and costly hand scrubbing. If a metal surface which has been treated with one of the diphase cleaners is rinsed with water, considerable force will be required for rinsing if only a very thin residual film is desired. If an alkaline rinse is used, however, very little mechanical force is needed. If the solution is strongly alkaline, complete stripping of residual film results with scarcely any agitation. Thus the mechanical action required with other types of metal cleaners can be largely eliminated, being replaced by chemical action by use of diphase cleaners.

The technique of diphase cleaning is flexible to an extraordinary degree. It is capable of variation

to meet problems raised by peculiarities of soil or metal, limitations in cleaning equipment available, special requirements for the state of the cleaned metal surfaces, and economic limitations. The field of metal cleaning is so complex that no single formulation or process will fill all requirements. Methods must be adapted to specific cases. Theory can aid in making such adaptations, but is as unlikely to provide a universal detergent as it is to lead to a universal solvent.

New Drew Emulsifiers

Announcement of technical bulletins on two new emulsifying agents, "Chlorsol" and "Base 401 M" was made last month by E. F. Drew & Co., Boonton, N. J. The bulletin on "Chlorsol," which is described as a solubilizing agent for chlordane. discusses the function, chemical nature, physical properties, formulation and handling information on the new compound. Similar data are included in the bulletin on "Base 401M," an emulsifying agent for the preparation of emulsifiable DDT concentrates, benzene hexachloride, etc. Copies are available on request.

Former C-P-P Man Dies

Thomas Adamson, 78, a retired clerk of Colgate-Palmolive-Peet Co., Jersey City, N. J., died recently in Chicago. He is survived by a sister and two brothers.

Phila. Chem. Club Elects

Officers installed recently by the Chemical Club of Philadelphia include: President, Harold B. Dohner, Amalgamated Chemical Corp.; first vice-president, Albert Frank, Alex. C. Fergusson Co.; second vice-president, Morris C. Swope, Swope Oil & Chemical Co.; treasurer, Carl M. Obeck, Merchants Chemical Co.; secretary, G. P. Nelson, J. T. Baker Chemical Co.; corresponding secretary, James W. Ritz, Emery Industries, Inc.

Diamond Advances Sargent

The election of John A. Sargent as executive vice-president of Diamond Alkali Co., Cleveland, was announced recently by Raymond F. Evans, president.

SANTTARY PRODUCTS SANTTARY PROBUCTS A SECTION OF SOA

HEN trade associations meet over the next few months, memberships will be listening hard for ways to sell more goods because that is now the No. 1 problem, be it manufacturer, jobber, or dealer. Everybody has found selling pretty tough since the turn of the year, particularly in the sanitary supply and general janitor supply fields. But the solution which sellers seek is not to be found in the method too generally being used,—sell for less than the other fellow. No orders? Then, cut the other fellow's price and take some of his business. Great until he in turn does it back to you,and then you to him, etc., etc. How to get more business for everybody, how to get them to use more of the products of all of us. That's it,—and that should be prominently on every association current meeting agenda!

OXICITY of some of the newer insecticide chemicals has become a "hot" subject during the past month. Two developments, although they have a more immediate bearing on agricultural in sect control problems rather than household, may be significant. The action of the U. S. Food and Drug Administration in moving against the use of DDT and some other chlorinated insecticide compounds in, on and around cattle and dairy barns came first. After this, the action of some leading canners in announcing a ban on vegetables and fruits carrying residues beyond a very small maximum followed.

Will the next step be in the direction of restrictions on household products? In view of the manner in which they are used in the home and around human beings and their food, this well could be. But we are inclined to believe that this would be going rather far afield as long as numerous products containing

arsenic, fluorides, thallium, and other equally toxic materials are in common use. But the wide industrial and institutional use of DDT and other chlorinated insecticides, particularly in places where foods are handled, stored, prepared or packed, might tend to influence feeling in view of the actions of some canners. Any official thinking in this direction, however, we sincerely hope will proceed with utmost caution for industry too has much at stake.

HALL we spell "chlordane" with an "e," or shall we spell it "chlordan?" War impends between the entomologists and the chemists over this all-important "e." The chemists insist that "ane" is for methane, ethane, propane, butane, and their ilk. But not for chlordane. The entomologists, obviously hot under the collar over what they consider an encroachment upon their domain, are insisting on their rights, and are determined to spell it, "chlordane." And there it stands.

Before any blood-letting occurs, we hasten to stick our neck out as usual and make everybody real mad. If we call the product "chlordane," like in Dane, it looks like the "e" is needed. But, if we call it "chlordan," like in Dapper Dan, out goes the "e". Of course, spelled "chlordane," the product raises particular hell with roaches, ants, and beetles. With the "e" dropped off, some question of the insecticidal effectiveness of the compound might arise in the minds of more meticulous scientists.

Now in Europe, they write iodin, bromin, and margarin. In the U. S., we spell them iodine, bromine, and margarine. Then we write glycerol both glycerine and glycerin. All of which proves exactly nothing, we imagine. Or, maybe that if the knife is sharp enough a hair can always be split.

CCASIONALLY, one meets with the assumption that the use of disinfectants is concerned solely with the prevention of the spread of infectious diseases through direct contact with contaminated objects or surfaces. This somewhat traditional idea is being aided, to a certain extent at least, by the custom of using E. typhosa as test organism in the evaluation of a given disinfectant, and in the determination of the strength of the solution to be applied in practice since E. typhosa is typical of the kind of microorganism usually spread by contact. Thus the significance of surface disinfection with respect to other modes of transmission of infectious diseases is somewhat obscured. In connection with the spread of respiratory infection, the recent emphasis upon the sterilization of air (by means of ultraviolet irradiation or through the use of germicidal glycol vapors) seems almost to relegate the use of chemical surface disinfectants to a position of secondary importance.

Newer Findings

VET such an attitude does not appear justified on the basis of a number of both older and newer pertinent findings. The limiting view seems to be weakened particularly in the light of an extensive series of recent investigations originating in England and continued in the U.S. which bear upon the problem of transmission of infections via the naso-pharyngeal route. The second world war provided an excellent opportunity for studying and combating the incidence of air borne cross-infections in hospitals and in barracks. Incidentally, it is axiomatic that anything learned about such matters in hospital wards should apply directly to the understanding of the spread of respiratory infections in general since the prevention of such infections in schools, homes, etc.,

*Before the 35th annual meeting of the National Association of Insecticide and Disinfectant Manufacturers, Inc., Dec. 6-7, Hotel New Yorker, New York Constructed, in part, from the author's presentation before the Gordon Research Conference on Medicinal Chemistry (American Association for the Advancement of Science) in New London, N. H. August 23rd, 1948, published in The American Journal of Pharmacy 20,321 (1948).

The Expanding Rationale of Chemical Disinfection

Dr. Emil G. Klarmann*
Lehn & Fink, Products Corporation

depends upon the same basic principles.

For a number of years prior to 1934 it was generally accepted that acute respiratory diseases, too, could be spread by contact; the latter term is understood, in this connection, to mean either direct transmission as e.g., by kissing, or indirectly, e.g., by contaminated hands, infected instruments or other material objects. Since then, however, it became evident that the air of enclosed spaces could become badly contaminated with a variety of pathogenic microorganisms, and this, in turn, opened up the question of the comparative significance of the contact and aerial routes.

If the transmission of disease takes place via the aerial route the following three possibilities must be considered:

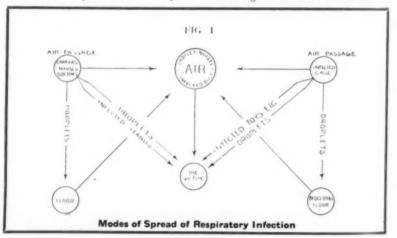
- droplet infection, implying direct impingement of the ejected infective matter upon, e.g., the mouth, the conjunctiva, the open wound, etc.,
- infection by droplet nuclei, implying inhalation of the minute residues of evaporation from droplets

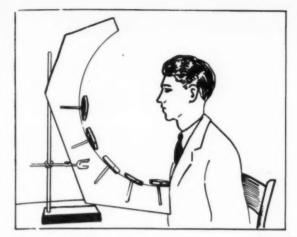
which because of their smallness and lightness may remain suspended in the air for long periods of time,

3) infection by contaminated dust representing a secondary reservoir of infective particles which accumulate on the floors, also on clothes, blankets etc., and which may become suspended in the air for comparatively short periods of time, particularly following some mechanical activity, such as sweeping.

The self-explanatory diagram (Fig. I) taken from a comparatively recent memorandum of the British Medical Research Council (1) illustrates the combinations of factors contributing to the spread of respiratory infection.

Hare and Mackenzie (2) determined the rate of expulsion of liquid particles from the mouth and nose by speaking, coughing, sneezing and blowing. Using a holding arrangement as shown in Fig. II they placed five agar plates at the angles of 0°, 22.5°, 45°, 67.5° and 90° relative to the subject's mouth. They found that the great majority of microorganisms are contained in





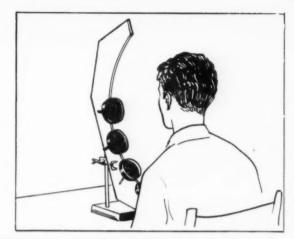


Figure II. Holding arrangement for use in determining the tra-jectory of expelled liquid particles (Hare and Mackenzie).

droplets of fairly large size whose trajectory depends upon the resultant of the expelling force and of the force of gravity acting perpendicularly to their initial motion. The trajectory is flatter in the case of violent methods of expulsion than in talking. As shown in Table I, in the case of blowing, the proportionate majority of the organisms are to be found on the 67.5° plates, in that of coughing on the 67.5° and 45° plates, in that of sneezing on the 45° and 22° plates, and in that of talking on the 22.5° and 0° plates, i.e., more directly under the mouth. In absolute terms, the greatest number of organisms is expelled by sneezing, the smallest by talking.

What happens when an unalso by photographs reproduced in Figures III and IV.†

Those droplets which reach the agar plate give rise, upon incubation, to numerous bacterial colonies among which there will be an appreciable proportion of pathogenic micoorganisms, especially if the sneeze originates either with a carrier or with an individual affected by a respiratory ailment.

Figure III

The ultimate destination of the expelled particle depends upon the position and the surroundings of the donor. Thus, when a person is lying in bed, a high proportion of his expelled particles will impinge mostly upon some surface below



Figure IV

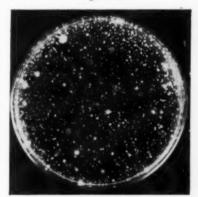
stifled sneeze is directed against a dish of nutrient agar is illustrated

†Reproduced by permission of Dr. M. W. Jennison, Department of Plant Science, Division of Bacteriology, Syracuse University.

TABLE I

Average Number of Colonies Per Person on Plates Exposed at Different Angles in Relation to the Mouth (Hare and Mackenzie)

Position of Culture	Tall	king % of	Coug	ghing % of	Blov	wing % of	Sneez	ing % of
Plate	Average	Total	Average	Total	Average	Total	Average	Total
0°	28.1	30.0	6.7	4.9	1.3	2.6	355.8	7.5
22.5°	39.1	41.8	8.9	6.5	1.6	3.2	1,636.0	34.4
45°	16.2	17.3	60.1	43.9	8.0	16.0	2,425.6	51.1
67.5°	8.4	9.0	52.9	38.7	27.0	54.2	262.8	5.5
90°	1.8	1.9	8.2	6.0	12.0	24.0	71.3	1.5
Total	93.6	100.0	136.8	100.0	49.9	100.0	4,751.5	100.0
Number of subjects	3	9	2	0		3)



the mouth. When standing upright most of the droplets will fall to the ground, some upon the clothes, some will lose moisture by evaporation and turn into free floating droplet nuclei. In this connection it is noteworthy that, according to Davis (3), droplets above seven microns in diameter are removed in the process of inhalation by the nose while onehalf of those of three microns reach the lungs which are also penetrated by all those 1.5 microns or smaller.

Dust as Carrier of Streptococci

THE participation of dust in the transmission of hemolytic streptococci was considered by several earlier investigators whose work has been reviewed by Winslow and Kligler (5).

In 1935, Cruikshank (6) reported that the types of hemolytic streptococci infecting burns were the same as those present in the air and in the throats of certain of the ward patients. Soon thereafter, White (7), and later Cruikshank and Godber recognized the role of infected droplets and dust in puerperal fever (8) when suggesting that scarlet fever, tonsillitis and pharyngitis could be acquired via the air route from puerperal fever cases. The same aspects in streptococcal complications of measles and influenza were studied by Cruikshank and Muir (9). Cruikshank and his collaborators realized that while the primary source of respiratory pathogens is, of course, the infected patient or carrier, the secondary reservoirs in which such disease agents accumulate are furnished by floor dust, bed clothes, etc. These findings were confirmed and extended by other English and Canadian investigators, including Van den Ende, Thomas, Hare and their collaborators (10, 11, 12, 13, 14, 15). The following finding reported by Thomas is illustrative (12): he examined the floor dust collected in one morning in one hospital ward during an outbreak of streptococcal sore throat and follicular tonsillitis; there were twenty-two patients in a twenty-six bed ward, nineteen of whom exhibited streptococci in their throats. The total weight of dust was one

TABLE II

Distribution of Hemolytic Streptococci in Hospital Dust (Thomas)

Ward (16-bed section)	16,261,000	Main corridor	1.411,000
Ward (10-bed section)	23,323,000	Office	1,041,000
Cubicle 1 (F)	17,020,000	Linen room	939,000
Cubicle 2 (nonclinical		Staff day-room	329,000
case)	1,173,000	Day-room (transit only)	320,000
Surgery (E. N. T.		Entrance corridor (kitchen)	1.171.000
dept.)	160,000	Annex (toilets, baths, etc.).	38,745,000

ounce, reflecting an acceptable degree of cleanliness; yet it contained the enormous number of over onehundred million streptococci which were distributed as shown in Table

An illustration of the contamination of the air by hemolytic streptococci, as a result of mechanical activity, such as dry sweeping or bed making is furnished by Fig. V.

In this connection mention may be made of the work in this country of Buchbinder and collaborators (16, 17) who carried out studies on changes occurring in the Group A of hemolytic streptococci sprayed into simulated room environments. These organisms were found to survive long periods of time without loss of pathogenicity, as verified by their virulence for mice.

A considerable number of publications by American investigators helped to clarify the problem of dispersal of respiratory pathogens in general, and of hemolytic streptococci in particular. Hamburger (18, 19, 20, 21) and coworkers summarized a number of significant observations carried out over a period of time among which are the following:

In the acute stages of streptococcal sore throat or scarlet fever,

over eighty per cent of saliva specimens contained hemolytic streptococci of the same serological type as found in the throat; when present in saliva their number per cubic centimeter varied from about one hundred to several million.

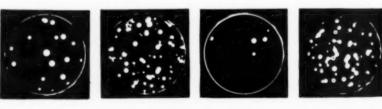
(Sulfonamide drugs administered in doses of four to six grams over a period of one to fifteen days did not decrease the number of hemolytic streptococci in saliva.)

As to the intensity of their dispersal, more organisms are expelled from the upper respiratory tract by blowing the nose than by sneezing or coughing; in fact, millions of beta hemolytic streptococci are expelled by a carrier exhibiting the positive nose culture, with a single nose blow. Nose blowing produces a threefold effect: it contaminates the handkerchief, it contaminates the hands, and it allows the escape of a number of streptococci into the air. As the mucus on the handkerchief dries, more organisms are distributed into the air, while the contaminated hands in turn contaminate personal clothing, bed clothes and other objects touched by them; all this creates secondary reservoirs which become the major source of air-borne hemolytic streptococci.

The observation made by

Figure V

Hemolytic Streptococci Recovered from the Air of a Pharyngitis-Tonsillitis Ward



Floor Being Swept (Dry Broom)

Ward Quiet



Beds Being Made

Ward Quiet

Gordon several years prior to Hamburger's investigations, viz., that scarlet fever patients discharged with rhinitis are more likely to transmit the disease to others than those without rhinitis, fits into this picture (22).

In Hamburger's opinion, the "direct hits" by streptococci ejected by sneezing or coughing are probably of lesser importance in setting up infections, as is also the inhalation of droplet nuclei, even though a few hundred organisms are considered sufficient to cause streptococcal sore throat.

Although Coburn (23) suggested that in certain carriers some strains of streptococci undergo biological changes which make them communicable, in contrast to others which remain non-communicable, Hamburger believes that the difference between carriers resides in the number of microorganisms which they can expel. The original papers should be consulted for the substantial clinical support of this opinion. Incidentally, he points to the essential role played by hemolytic streptococci in rheumatic fever which renders the prevention of streptococcal infection a matter of life and death, and not merely one of discomfort or lost man-days.

Other extensive investigations on the transmission of respiratory disease in army barracks by Loosli,

Lemon, Wise and Robertson (24) employing special techniques of analysis of the bacterial content of air, bed clothes, wearing apparel and floor dust, support the contention that excretions expelled from the upper air passages contribute to the heterogeneous bacterial population in the environmental air and dust which is involved in causing infection of the respiratory tract following inhalation (25). Since beta hemolytic streptococci are readily isolated and typed, they were used as representative indicators of disease agents of the respiratory tract. Dust cultures collected from over 1500 beds were 23 per cent positive for streptococci in winter, and 75 per cent positive in spring; 94 per cent belonged to group A, 5.8 per cent to group C, while groups B or G were encountered only in winter.

The amazing capacity of survival of streptococci in blankets is shown by the fact that after six weeks of storage, fifty per cent of the blankets were still positive for streptococci. When 10 pairs of the most heavily contaminated blankets were stored at 70 to 85°F. for over three months, all yielded positive streptococcus cultures at the end of this period.

Streptococci recovered from the dust of floors or of bed clothes did not show any loss of their ability to lyse fibrin when compared with strains freshly isolated from noses or throats (26). Repeated demonstration in the environment, viz., floor dust, bed clothes, etc. of large numbers of the same types of streptococci as found in the noses and throats of the carriers indicates strongly that inhalation of the dust borne pathogens furnishes an important mode of infection and of its spread. Low humidity favors a longer survival of streptococci (27).

The risk of streptococcal contagion through the medium of infected dust must not be considered in connection with hospital practice alone, in view of the reports by Horwood (28), and by Walter and Hucker (29). The former isolated hemolytic streptococci (also staphylococci) from over fifty per cent of samples of household dust examined; the latter found them in twenty-two out of thirty-seven sweepings of different rooms in ten establishments, including six schools, a boys' dormitory, a theater and a hotel. Thus while the dust-borne transmission of streptococcal diseases appears to present a significant problem to hospitals, the two papers referred to last, emphasize the existence of a similar problem with respect to homes as well as to public rooms.

Incidentally, hand shaking by nasal carriers may transfer thousands of organisms with a single hand shake (the largest number observed being 48,000). A hospital epidemic affecting 150 patients was traced to a food handler from whose hands several millions of hemolytic streptococci were recovered by culturing (27).

Dust-Borne Transmission of Other Respiratory Infections

THE role of dust in the transmission of diphtheria is the subject of an inquiry by Wright and coworkers (30, 31, 32). Virulent diphtheria organisms were recovered in large numbers in the floor dust of diphtheria wards; they were found to be capable of surviving in dust, in vitro, for three months while retaining their virulence, as shown by Table III.

The significance of the pres-(Turn to Page 153)

TABLE III
Survival of Diphtheria Organisms in Dust (Wright et al.)

	I	First examination	Second examination	Length of
Date		Result	Date Result	survival
Oct. 7	G	moderate no., M few	Oct. 14 G numerous	7 days
Oct. 7	I	few	Oct. 14 G and I few	7 days
Oct. 7	G	few	Oct. 14 G few	7 days
Oct. 21	1	very numerous	Nov. 22 I (virulent)	1 mth
			moderate no.	1 mth
Oct. 21	G	very numerous	Nov. 20 G numerous, I	1 mth
			few, both virul	ent 1 mth
Oct. 21	G	very numerous	Dec. 18 G moderate no.,	
		•	virulent	2 mths
Oct. 21	G	numerous, I and M few	Dec. 21 Negative	2 mths
Oct. 28	G	numerous, I few	Dec. 10 G moderate no.,	
			virulent	6 wks.
Nov. 12	G	numerous	Mar. 3 G few, virulent	102 days
Nov. 19	G	moderate no	Mar. 3 Negative	102 days

G = gravis,

I = intermedius,

M = mitis.

Wherever Foodstuffs are Handled...



In food processing plants . . . in bottling plants . . . in warehouses — wherever foodstuffs are handled—it's Pyrenones for effective, economical, and safe insect control.

More and more manufacturers are basing their formulations of emulsion and oil type residual sprays on Pyrenone Concentrates because they know from experience that Pyrenones give them—at economical concentrations and without hazard of toxicity to humans—

- Highly effective control against a wide range of food insects
- · Long-lasting residual protection

Plan now to use economical Pyrenone Concentrates in *your* emulsion or oil-type spray. Write or phone us today for technical data and advice.

*Pyrenone is a registered trade-mark of U.S.I.



DUSTRIAL CHEMICALS, INC.

60 East 42nd Street, New York 17, N. Y.

Branches in all principal cities

In Canada: Standard Chemical Co., Ltd., 99 Vanderhoof Avenue, Leaside 17, Canada

CRACK FILLERS

By Robert A. Stetson



Above: A group of representative crack filling compounds now available on the retail market. They range from stick form to pastes and powders.

HE old-time handy man is rapidly disappearing from the American scene. Although he has been replaced to some extent by the "fix-it" shop, people are learning to do things for themselves. Lots of folks are learning that there is considerable fun and much personal satisfaction in making minor repairs and in keeping things in good working order. Therefore, with almost every householder becoming his own handy man, there is a growing appreciation of and a demand for products that facilitate making repairs or renovations.

Crack fillers are products of this kind. They may be described as the modern successors to old-fashioned putty and the like. While not entirely replacing putty in certain jobs, the more modern crack fillers have a number of advantages over the older materials and have a much wider range of utility. Unlike putties, modern crack fillers are available not only in painters' supply houses and hardware stores, but also wherever sanitation and maintenance materials are sold. Aside from their production by specialty manufacturers, crack fillers have also been included in the lines of household cleaners and polishes being put out under well-known brand names.

With a growing market and with increasing competition, producers have found it expedient to redesign their packages for greater appeal and utility. Indeed, the package for one such item—a repairing-plaster—recently was awarded first prize in a packaging competition.

One basic reason for the growing popularity of so-called crack fillers and related products is the many and varied uses to which they may be put. It is almost impossible to list all their applications. Though useful to carpenters, painters, decorators, floor finishers, cabinet makers, plumbers, mechanics, electricians and other craftsmen, modern crack fillers are especially adapted to use by home owners for filling cracks and for covering dents, nicks and chips in wood, stone, plaster and the like. They are extensively used to smooth out minor imperfections and roughness of surfaces prior to the application of a final finish, e.g. paint or lacquer. These compositions are very useful for resetting loose tiles, casters, knobs, drawer pulls, rungs, for fixing tools firmly in their handles, and for tightening screws and bolts.

Aside from their value for filling cracks in door panels, trim, furniture and floors and for the other indicated purposes, certain of these crack fillers can be molded and shaped. Hence they are valuable not only to the repairman but to the hobbyist as well; the latter using them to make models, molds and castings, plaques, relief maps, inlays, and for many other purposes. On hardening, some of these compositions, especially those containing wood flour, are easily tooled and can be cut, sawed, drilled, carved and planed.

Easy To Use

GREAT advantage of crack A fillers is the fact that they are easy to use without too much fuss or muss. The powdered type of product, often called cold water putty, is mixed with enough water to make a paste or putty-like mass of the desired consistency. This is applied with a putty knife, a spatula or similar tool to the cleaned area, pressed into place, and the excess smoothed off quickly. No mixing is required with the pasty or doughy types of products which are supplied in air-tight containers or collapsible tubes. Those made with powdered or pulverized wood are sometimes referred to as plastic wood, wood dough or wood putty.

While there appears to be no established standard for these modern

crack fillers, most manufacturers aim at meeting certain basic requirements such as: smooth texture, ease of handling, applicability to a variety of common materials and surfaces. non-inflammability and freedom from harmful ingredients, and a drying rate which permits proper application without undue delay in hardening. On drying, the crack filler should show good adhesion without brittleness or any tendency to crumble away. It should not shrink unduly on drying and should be easy to trim or sandpaper down to a smooth finish. A properly prepared filler will hold nails or screws without cracking or splitting and should readily take and hold a coating of paint, varnish or the like. Highly desirable is the ability to resist water and weathering.

As already indicated, crack fillers are sold as dry powders or as doughy masses. Essentially, all of these products consist of a mixture of binders and fillers, with or without plasticizers or added coloring agents. Fillers are essentially of two types:—cheap mineral substances or certain cellulosic materials. When a mineral filler is employed, it generally consists of one or more materials like chalk, whiting, barite, talc, volcanic ash, pumice, silica, infusorial earth, China clay, tripoli and others.

Sawdust Is Widely Used

By far the most important cellulose material used in the formulation of crack fillers is fine sawdust or wood flour. Now becoming an important article of commerce, wood flour is produced from selected dry wood waste by several types of grinders and is sized by mechanical or air screening methods. As explained by Reineke (1) of the Forest Products Laboratory, the term "wood flour," for which no clear-cut definition has been adopted, is applied somewhat loosely to wood reduced to finely divided particles approximating those of cereal flours in size, appearance and texture. Used in both the dry and paste type of wood fillers, the choice of a wood flour may be dictated solely by cost, but in many cases other factors may enter the picture. For

Crack fillers, the successors to putty, are growing in popularity because of their great versatility.

example, color may be a factor in the use of certain types of wood flour for specific applications. Wood flour from certain strongly acid species, such as oak, may be considered undesirable from the standpoint of chemical activity or tendency to discoloration.

Preparations containing high proportions of wood flour are often called plastic woods or wood putties. As explained in a government manual, (2) a modern product of this type consists of wood flour, resins, volatile solvents, and a plastic binding material such as cellulose nitrate.

Binders Used

VARIOUS kinds of binders are used for making crack fillers (3) and these provide a convenient basis for discussing the formulation of such products. Used singly or in combination, such binders include: calcined gypsum or plaster of Paris, animal glue, casein glue, nitrocellulose or other cellulose derivatives, and various synthetic resins like ester gum, alkyd resins or polyvinyl compounds. Because these binders are hygroscopic or are dispersed in volatile solvents, the finished crack fillers or plastic putties must be packaged in air-tight containers. Powdered products and larger sizes of paste-type products are marketed in friction top cans. Smaller sizes of paste products are generally sold in collapsible tubes with airtight closures.

Crack fillers based on gypsum or plaster of Paris are provided as dry powders that are mixed with water just before use. Although plaster of Paris, by itself, has been suggested (4) as a crack filler for ordinary wood work, it is common practice to mix it with various fillers and adjuncts. For example, a product said (5, 6) to have been on the market for several years, is composed of:

Quartz silica...... 10.0 parts

Plaster of	Paris.	*****	2.0 parts
Dextrin.			1.5 "

To effect greater hardness, it is suggested that the dextrin could be replaced by powdered gum arabic. The addition of about one-half part of wood flour or fine sawdust would serve to enhance the toughness of the product.

An other frequently cited product, which was actually described in a patent (7) granted nearly two decades ago, is quite similar. It consists of:

Plaster of Paris	32	parts
Dextrin	4	44
Volcanic ash	4	42

Infusorial earth, fuller's earth or tripoli may be used instead of the finely powdered volcanic ash. Described as a filling and binding composition for general use, the product may be colored if desired. On drying after application, it forms a non-brittle, tenacious product that can be cut, sawed or planed, and which can be smoothed down and polished. It holds nails without cracking.

Of a similar nature is a product for filling cracks in floors, knot holes or rat holes or for permanently repairing old cuts made for wires and pipes. This is made (8) by intimately mixing the following ingredients:

Plaster of Paris	2.0	part
Precipitated chalk	12.5	86
Yellow dextrin	2.0	44

Another inexpensive patching plaster or crack filler can be made from:

Plaster of Paris	16	part
Casein glue or canary		
dextrin	2	**
Whiting or fuller's earth.	2	**

If available, dental plaster of Paris is better than the ordinary kind because it shows less shrinkage. Dry coloring pigments may also be added. A crack filler or cold water putty made along these lines could consist of:

Dental plaster of Paris	12	parts
Yellow dextrin	3	56
French ochre or other dry		
color	1	part

The patent literature offers other examples. Thus, according to a foreign patent, (9) a mass for filling holes in walls and for other purposes consists of a mixture of fibrous material such as asbestos, a binding agent such as gypsum or cement, a filling agent like pumice, and a paste-forming substance such as starch or wheat meal. This is mixed with water before use. In another case, (10) a cellulosic rather than a mineral filler is used. Thus, about 30 per cent of dry wood pulp, from which the resin and slimy matter have been partly removed by a special treatment, is mixed with about 70 per cent of a dry hydraulic binder, such as cement or plaster of Paris. When wetted, this mixture is used for repairing walls or for forming plugs in which nails, hooks and screws may be embedded.

Glues may be employed as binders in both the dry, powdered mixtures and the moist, putty-like products. Thus, a composition that makes a tough, tenacious filler for cracks, nail holes and such when wetted with water to form a thick paste, may be made from the following materials:

Fine sawdust	2 parts
Whiting	2 "
Asbestos cement	2 "
Casein glue	

It has long been common practice among painters, carpenters and repairmen to extemporaneously prepare crack fillers by mixing sawdust with liquid or liquified glue to form a pasty mass. For example, a well-recommended (11) crack filler, especially useful for filling cracks and crevices in floors, is made of

cabinet glue, melted with a little water in a double boiler, thickened with fine sawdust and colored to match the wood. This preparation must be used hot.

Pasty preparations made with glue call for the inclusion of a suitable preservative to prevent molding and bacterial spoiling. This point is given full consideration in Neufeld's (12) patented procedure for making a plastic, dough-like adhesive composition, suitable for filling crevices in wood and for other repair and molding uses. Basically these consist of mixtures of wood flour and casein glue made non-putrefactive with preservatives like hydroxy derivatives of diphenyl methane, alkali metal salts of parachlorometacresol and sodium salts of orthophenylphenate. Methods are also given for rendering the casein glue insoluble. A typical preparation of this kind is as follows:

Water	353.00	part
Casein	83.30	66
Wood flour	90.80	66
Borax	4.80	6.6
Ammonia (28ºBe.)	10.50	6.6
Hydroxy derivative of		
diphenyl methane.	0.75	part

To waterproof this composition there is added from two to five per cent by weight of sodium bichromate, 20 to 40 per cent of an oxidizing alkyd resin in emulsion form or 20 per cent or more of an algin compound. This results in the formation of a product which is non-flammable, has good adhesion and which is easy to sand and coat.

A bit more complex is the following formula for a plastic wood dough. As given in one of Bennett's (6) texts, this consists of:

Casein	50	parts
Lime hydrate	8	66
Trisodium phosphate	3	8.6
Sodium fluoride	3	66
Naphtha	2	66
Hardwood sawdust	32	44

In general, crack fillers are made in powder, paste or putty-like forms. There is also a new, stick type.

The ingredients are mixed and enough water is added to make a product with a consistency suitable for packaging in tubes.

Various cellulose derivatives are often employed as binders in the manufacture of crack fillers or plastic woods. Dissolved in suitable solvents, which evaporate on application, they are mixed with the filler and other adjuncts to form the desired doughy product. For instance an efficient plastic wood may be prepared from a mixture of fine sawdust or wood flour and a solution of cellulose acetate. (4)

However, nitrocellulose solutions find more frequent use. These may consist of a prepared lacquer, solutions of celluloid or scrap film, or collodion. Illustrative is the following formula (13) for making a plastic wood:

Xylol	1 qt.
Acetone	11/4 pt.
Ethyl acetate	1 pt.
Castor oil	3/4 oz.
Celluloid	1 1/2 lb.
Wood flour	sufficient

Mix the xylol, acetone and ethyl acetate, add the castor oil and then dissolve in the celluloid. Add enough wood flour to make a paste. If necessary, xylol may be added to reduce the consistency.

Natural or synthetic resins are often used in conjunction with nitrocellulose. In the following example, (6) a highly satisfactory wood dough or plastic putty is prepared with solutions containing rosin and nitrocellulose:

Resin solution 1	gal.
Glycerine 1	pt.
Butyl alcohol 3	pt.
Whiting 8	lb.
	lb.
	gal.

The rosin solution consists of 16 lb. of WW rosin cold-cut (dissolved) in one gal. of methyl acetone. The dope solution is made on a basis of one lb. of cleaned movie film (nitrocellulose) to each gallon of methyl acetone.

A modification of this formula calls (5) for the use of:

Available Now!

Available in Quantity!

Available for Immediate Shipment!

Paradow

PARADICHLORBENZENE

Here's good news for manufacturers of sanitary specialties! Paradow is now available in sufficient quantity to meet your requirements. This highly adaptable product —pure, crystalline paradichlorbenzene—has the important advantage of great ease in molding and packaging. It conforms in every way to traditional Dow standards of quality and uniformity.

Packed in 25, 50, 100 and 200 pound drums

AGRICULTURAL CHEMICAL DIVISION

THE DOW CHEMICAL COMPANY - MIDLAND, MICHIGAN New York - Septem - Philodelphie - Washington - Cleveland - Detroit Chicago - St. Leuk - Measure - Son Promise - Le Annales - September - Sep



CHEMICALS INDISPENSABLE

TO INDUSTRY AND AGRICULTURE

a.	Wood flour	20.0	parts
	Whiting	6.0	66
	Butanol	4.0	66
	Glycerine	2.0	66
b.	Rosin	5.0	parts
	Acetone	3.0	66
C.	Nitrocellulose	7.2	parts
	Acetone	30.0	66
	Butanol	22.8	66

Solutions b and c are made separately and then added to the paste a.

Popular types of plastic woods for crack filling and general use are based on binders consisting of nitrocellulose-ester gum mixtures. Ester gum, the first of the modern "synthetic" resins, is made by the reaction of rosin with glycerine. It is noteworthy that one of the best known and best selling plastic wood products is based on just such a combination. This efficient and popular product was first described in a patent granted to Griffiths: (14) the patent itself being assigned to one of the leading producers of household cleaners, polishes and specialties. A typical combination, from the patent specifications, is as follows:

Celluloid scrap	19	parts
Castor oil	3	66
Ester gum	8	66
Methyl acetone	44	66
Wood flour	26	66

Another example from this patent makes use of mixed fillers:

Celluloid scrap	10	parts
Castor oil	4	66
Ester gum	7	66
Methyl acetone	15	64
Benzol	15	66
Alcohol	5	66
Wood flour	24	46
China clay	20	44

A later patent (15) offers further modifications for making plastic wood compositions. In addition to nitrocellulose, formulas are given which illustrate the use of pyroxylin, cellulose acetate or other cellulose derivatives. Indicative is a preparation made from:

Pyroxylin	*	*			100 parts
Dibutyl phthalate					15 "

Wood flour	250	parts
Ester gum	65	66
Castor oil	35	6.6
Volatile solvent	640	66

A preferred solvent consists of a mixture of 70 per cent acetone and 30 per cent denatured alcohol. The first five ingredients are combined and mixed with about half of the volatile solvent. This is allowed to soak for six to 24 hours to produce a more satisfactory product. At the end of the soaking period, the material is wet with the balance of the solvent, after which all the ingredients are thoroughly mixed in a kneader. A stabilizer, such as urea (0.4 to 1.0 per cent) is generally included in the mixtures.

A similar but much simpler plastic wood dough is cited by Bennett, (6) as follows:

Collodion	86	parts
Ester gum, powdered	9	46
Wood flour	30	66

Mix the first two ingredients, allow to stand; stirring from time to time until the ester gum is dissolved. Then, in small portions with stirring, work in the wood flour until a uniform, doughy mixture is obtained.

Various resins, both natural and synthetic, find important and growing use as the sole binding agents in the production of crack fillers. Mixtures of sawdust and shellac have long been used to fill cracks between floor boards and for other repair purposes. Manila gum is also representative of natural products that may be used for making plastic woods. (6) Thus, a typical binding base may consist of:

Manila	gum	175 lb.
	alcohol	30 gal.
Benzol.		3 gal.

Its employment in the production of a filler of the plastic wood dough type is illustrated in the following formula:

Binding base (above)	30 gal.
Silica	100 lb.
China clay	50 lb.
Wood flour (coarse)	10 lb.
Wood flour (fine)	25 lb.

Synthetic resins are being used in the more modern types of crack fillers and similarly-useful plastic materials. As should be expected, products of this sort are generally described in patents. Esselen's (16) patent, for example, describes a plastic preparation of this sort as consisting of:

Polymerized vinyl acetate		
(Vinylite A)	18	parts
Dibutyl phthalate	4	66
Ethylene dichloride	72	44
Carbon tetrachloride	18	66
Wood flour	23	66

This material has a doughy, putty-like consistency. It drys with very little shrinkage to yield a product that has the consistency and characteristics of wood. It is said to be useful as a crack filler and for general repair work, for hand molding, for repairing dents in metal work, for building up and changing the shape of articles, and for many other purposes.

Other resins, like polymerized vinyl benzene or certain alkyd resins, may be used to make these plastic compounds. An example, base on an alkyd resin, is given below:

Alkyd resin (Glyptal		
DUX3002)	24	parts
Chloroform	94	6.6
Japan drier	5	
Wood flour	36	44

Thermoplastic crack fillers are probably of greater importance in industrial practice than in household repairing. This is because they require heating before application. Products of this sort have been used for many years. One such crack or wood filler is made by melting together equal parts of rosin and wax and incorporating into the hot mixture as much fine sawdust as possible. Another preparation which must be used while hot consists of a mixture of equal parts of rosin, wax and Venetian red. (4)

More modern, but also more complex thermoplastic compositions are described in the patent literature. Illustrative are the preparations developed by Kennedy, (17) one of which is as follows:

(Turn to Page 153)





QUATERNARY AMMONIUM GERMICIDAL TABLETS

After two years of research we are proud to introduce "Q-TABS," an entirely new quaternary ammonium formula in tablet form. Q-TABS assure you a sound, safe, scientific and economical method of using a sanitizer. There is no waste by measuring, no waste by spillage, no waste by leakage or breakage of bottles. Q-TABS provide the modern answer to sanitizing problems. One Q-TAB in 2½ gallons of water yields a sparkling clear sanitizing rinse. Q-TABS are completely soluble in water and leave no sediment or deposit in the solution. Q-TABS are available in bulk for repackaging under private brand or can be purchased already packed in 100 and 200 tablet containers respectively.

Write today for further details, samples and quotations. Be the first in your area to introduce the new, fast-dissolving, completely soluble Q-TABS.

FAST!!

Q-TABS break up within 30 seconds after being placed in water and are completely dissolved inside of 2 or 3 minutes time. This speedy action is important to the user.

SPARKLING SOLUTIONS!!

Q-TABS contain no starch or insoluble matter and dissolve in water to form brilliantly clear sanitizing solutions. Q-TABS also act as a water softener.

ANOTHER FIELD TESTED LABORATORY APPROVED PRODUCT

Tames Varley & Sons, INC.

1200 SWITZER AVENUE • ST. LOUIS 15, MO.

& SONS, INC

MOTH PRODUCTS

By Milton A. Lesser

stimates of losses due to moth damage run anywhere from 100 million to about one-half billion dollars per year. Whatever the actual figure, the cost is unduly high. To this cost may be added the approximately 25 million dollars' worth of moth products sold annually to the consuming public. (1) Moreover, as noted by Mail, (2) these calculations do not include the large volume of protective products being sold to textile mills, to fur and garment storage organizations, and to other industrial units.

In addition to revealing the tremendous price paid by the American public, these figures show quite clearly that people still have much to learn concerning the nature and habits of moths and the protection of fabrics against their action. (3) These data also indicate that many of the moth products on the market are either inefficient or, if effective, are improperly used. Hence the current trend is toward the development of materials with more certain action against moths and other fabric-destroying insects.

No one can say that the development of anti-moth products is a neglected field. Literally hundreds of patents, describing numerous compounds for controlling moths, have been granted during the last decade or so. As explained by Mallis, (4) it is the custom of some companies interested in moth-proofers to patent every likely-looking chemical in the hope that one will turn out to be the answer to the problem. Of the large number of compounds, described in well over a thousand patents, only a small number have proved capable of standing up under rigid tests and worthy of being placed in an increasingly competitive market. Some of the newer compounds are said

(5) to be quite good and a few can be described as conforming with basic requirements of low cost, nontoxicity, ready applicability, and durability.

Despite the extensive work already done-or perhaps because of it-broad studies on moth products are being carried on in many quarters. Research has been encouraged by the demand for products that will work longer and more effectively when applied by the householder or in the local drycleaning establishment. Investigation into the development of mothproofers has also been fostered by the growing appreciation and demand for fabrics that have been given protective treatment during the manufacturing process.

Would Pay for Moth-proofing

SURVEY (6) made in 1937 had already indicated that most people (about 84 per cent of those interviewed) would be willing to pay something extra for merchandise that was adequately protected against moths. Some people stated, however, that they would have to be convinced of the effectiveness of the treatment. Very indicative was the remark of one individual to the effect that, if such evidence were provided, moth-proofing would be to wool fabrics what "Sanforizing" is to cottons. Also very interesting were the views with respect to the types of wool products in which effective and long-lasting moth-proofing would be of special benefit. In decreasing order of importance, these were listed as follows: bathing suits, blankets, women's apparel, knitted outerwear, winter sportswear, upholstery and drapery, hand knitting yarns, rugs and carpets, woolen underwear, men's overcoats, and men's formal wear.

Nowadays manufacturers and merchants alike appreciate the sales advantages to be gained from a label bearing a "moth-proofed" statement.

The effectiveness of a moth product depends not only on a knowledge of how it works, but also how best to use it. Such information is, of course, based on data concerning the habits of the responsible insects. In the United States damage is attributable chiefly to two species of moths. These are the webbing clothes moth (*Tiniola biselliella*) and the case making clothes moth (*Tinea pellionella*). In rare cases there may be some injury by the tapestry moth (*Trichophaga tapetzella*).

The adult female lays from 100 to 300 soft, white eggs. These hatch in from four to eight days in summer or from three to four weeks in colder weather. The minute larvae that hatch out of these eggs feed and grow, after which they pupate. During this period the pupa undergoes the physiological changes which result in the development of the moth. Clothes moths require from about fifty days to three years to complete their development through the stages of egg, larva, pupa and adult. The length of their cycle may depend upon a number of factors, but in any event most of this time is spent in the destructive larval stage. (7) It is the clothes moths larva or grub which causes the damage and not the adult moth which does not feed.

It has been estimated that the progeny of a single fertile moth can consume 92 pounds of wool in a single season. This is bad enough, but the chief trouble is that the larvae munch here and there, destroying far more than they consume.

MACKENZIE DETERGENT CHEMICALS

STMPP

(Pronounced Stemp)

Sodium Tetra Meta Pyro Phosphate

(NaPO₃)₄Na₄P₂O₇

(pH 7.1)

A NEW AND VERY INTERESTING CHEMICAL FOR MANUFACTURERS OF

Synthetic Detergents

Lower cost

Increased sequestering action

Does not reduce wetting ability

Easier & more complete rinsing

Soaps

Lower cost

Increased sequestering action
Phenomenally increased wetting
ability
Easier & more complete rinsing

Cleaning Compounds Lower cost

Increased sequestering action
Greater stability in solution
Easier & more complete rinsing

The unusual properties of this new glassy phosphate can more than double the overall detergency of your product.

Sodium Metasilicate (Pentahydrate)

Both Chemicals are Currently Available in Car Lots

ALSO

Compounds—from our own chemicals—for Blenders & Jobbers
Dishwashing Compound
Driveway & Kitchen floor cleaner
Concentrated soap powders

Streakless car wash & others

MACKENZIE LABORATORIES INC.

Front & Yarnall Sts., Chester, Pa.

(9) The larvae thrive on wool, hair, bristles, fur and feathers and the wide range of commodities made from them. According to Reumuth, (10) not only do they clip off wool and animal fibers, but also vegetable fibers and artificial fibers of all kinds when these materials are mixed with wool. When forced to do so, the moth larvae will feed on and damage cotton, linen and silk, but they eventually starve on such a diet. (8) However, from a practical viewpoint, one may proceed on the assumption that larvae do not eat cotton, linen, rayon or other fabrics of vegetable fiber, or silk. (7)

While moths show their greatest activity in May, June, July, September and October, they may be troublesome in heated or airconditioned buildings at any time of the year. (11) Hence in most parts of the country, especially urban areas, moth control is no longer a seasonal proposition but rather a year-'round task. (2)

Carpet Beetles, Moths Alike

T IS common knowledge that damage often attributed to the clothes moth is actually the work of the carpet beetle. Sometimes known as the buffalo moth, this beetle belongs to the family Dermestidae. As with the clothes moth, it is the larva of the carpet beetle that does the damage. (12) Often the carpet beetle larva constitutes a more troublesome pest than its moth counterpart. In many discussions no distinction is made between the larvae of the clothes moths and those of the carpet beetle. This point is further heightened by the fact that both kinds of larvae often occur together. Also significant is the fact that methods for testing the value of moth products call for the use of clothes moth larvae, carpet beetle larvae, or both.

Over the years, a number of tests have been proposed for determining the efficacy of methods and materials used to make textiles resistant to moths. Recently, as the result of cooperative efforts on the part of several interested groups, standard tests for such processes and products have been established. The

A review of the four major methods of moth control, with emphasis on the two most recent and important means of eliminating moth damage.

test methods will appear in full in the 1949 edition of the "Technical Manual and Yearbook of the American Association of Textile Chemists and Colorists."

Many methods have been devised to combat moths and to prevent their larvae from damaging fabrics. These may be divided into four main groups as follows: (a) mechanical and physical methods, (b) the use of fumigants, (c) treatment with substances which act as stomach or contact poisons for the insects, and (d) chemical changes in the fiber structure which render fabrics indigestible or distasteful to the insects. Parenthetically, it may be mentioned that the last two groups comprise the modern mothproofing methods.

Mechanical Moth-Proofing

TNDER mechanical and physical methods are included such procedures as brushing, shaking, beating, airing and sunning of mothsusceptible fabrics and materials. Cold storage affords an effective means of protection from moth injury. According to one government expert, (7) clothes moth larvae are incapable of causing harm at 50°F. or below. They are killed within a day or two by zero temperatures, and articles such as clothing, rugs, and furniture exposed to zero conditions will be freed of moth life.

He also notes that dry cleaning kills all forms of moth life present at the time of treatment, but does not impart moth resistance. Washing in a strong solution of neutral soap has a like effect, but it does not protect against reinfestation. Of interest in this connection is the observation by Billings (13) that clothes moth larvae cannot be bred on thoroughly cleaned woolen goods. Storage of freshly dry cleaned or washed clothing, blankets and such

in well-sealed wrappings or containers will provide long-time protection against moths. The addition of some flake naphthalene is advised (7) to destroy any moths which may have gained access to the clothes before they were wrapped or stored in bags or boxes.

Fumigants

NAPHTHALENE belongs in the fumigant group, together with such familiar anti-moth materials as cedar products, camphor and, of course, paradichlorobenzene. Cedar wood and cedar oil have long been used as the sole agents or as adjuncts in products for controlling moths. It has been found (7) that air-tight chests properly made with heart wood of red cedar will afford a high degree of protection. However, cedar-lined closets as ordinarily installed in the average home are not dependable for protecting clothes from moths. Neither are chests of neutral wood lined with a thin cedar veneer. Moth closets and chests of the knock-down type are sometimes treated with cedar oil, but the value of such application is probably negligible. (11).

Cedar chips, cedar shavings, or cedarized wood are only partially dependable at best. To step up the effectiveness of such materials, which still retain a degree of sales appeal, they are sometimes mixed with more active substances. For example, one such combination consists of a mixture of equal parts of ground cedar wood and powdered naphthalene. (14) Another; somewhat similar preparation consists of: (15) Cedar wood, ground 5 parts

Naphthalene, powdered . . 50 "

Patented preparations (16) for "demothing" closets and such offer interesting examples of the use of cedar materials. Such products

IMPORTED OILS

OF THE HIGHEST QUALITY

OILS OF

PATCHOULY YLANG YLANG VETIVERT BOURBON **VETIVERT JAVA**

Roure-Dupont, Inc.

ESSENTIAL OILS, AROMATIC CHEMICALS AND PERFUME BASES GENERAL OFFICES
366 MADISON AVENUE, NEW YORK 17. N. Y.

CHICAGO BRANCH 510 NORTH DEARBORN ST. LOS ANGELES BRANCH

5517 SUNSET BOULEVARD, HOLLYWOOD

SOLE AGENTS IN UNITED STATES AND CANADA FOR

ROURE-BERTRAND FILS et JUSTIN DUPONT
. M.) FRANCE ARGENTEUIL (S & O) FRANCE

GRASSE (A. M.) FRANCE

may be prepared by impregnating cedar chips or sawdust with a solution containing cedar oil, paradichlorobenzene, ethylene dichloride, pyrethrum extract (in kerosene) and glycerine; the glycerine serving to control volatilization.

In discussing naphthalene, paradichlorobenzene and camphor, Mallis (4) remarks that, unfortunately, the use of these insecticides tends to give the housekeeper a false sense of security. This is because it is commonly believed that the mere presence of these materials will keep moths away. Since the value of these materials depends on their fumigation effect, it is essential that they be present in sufficiently high concentration in containers that are practically air-tight.

Noteworthy in this connection is the advice given in a publication (7) of the U.S. Department of Agriculture with regard to storage closets. Such a closet should be clean and perfectly tight and the materials stored in it should be thoroughly brushed. On the top shelf or in muslin bags hung from hooks, there should be placed one pound of either flake naphthalene or paradichlorobenzene to each 100 cubic feet of closet space. The fumes given off by the slow evaporation of the crystals quickly stop moth larvae from feeding. They will die eventually if the fumes are retained long enough in proper concentration. Labels on packages of paradichlorobenzene sold for such anti-moth usage should specify this dosage of one pound per 100 cubic feet of confined space.

Naphthalene vs. Para

NAPHTHALENE, long a house-hold standby, continues to enjoy large volume annual sales in the form of balls and flakes. (17) In studies on the efficacy of these products, Herrick and Griswold (18) found that, when used at the rate of two to three ounces per each five cubic feet of confined space, naphthalene flakes were toxic to the eggs and larvae of webbing clothes moths. Naphthalene mothballs, used at a rate of eight ounces in the same space (which is about

equivalent to the capacity of ordinary trunks or chests), for from three to four weeks, were also toxic to the larvae.

Contrary to some opinion, Frey (19) showed that paradichlorobenzene is much more toxic and a much more rapidly killing fumigant than naphthalene. It is also much more volatile than the latter material. His experiments with the webbing clothes moth revealed that at a dosage of 15 ounces per 100 cubic feet paradichlorobenzene gave a mortality rate of 100 per cent of the larvae in four days, 100 per cent of adults in one day, and 100 per cent of the eggs in four days. Frey recommended its use, at a rate of 12 to 16 ounces per 100 cubic feet, for packing clothes in air-tight storage chests. If the items are to be stored for a long period of time, he suggested the conjunct use of naphthalene and paradichloroben-

This last observation provides a basis for such combinations that have been suggested from time to time. (20) One such (14) consists of: Paradichloroben-

Among moth products, the greatest demand by the public is for paradichlorobenzene (21) and some thirty million pounds are made annually. (17) On occasion, this compound has been considered somewhat toxic, (22) but studies by Zupko and Edwards (23) indicate that paradichlorobenzene will not cause poisoning as commonly used in the household against moths. There is danger of toxicity, however, in industry where workers may be exposed daily for long periods to high concentration of paradichlorobenzene vapors.

In addition to its use with naphthalene, paradichlorobenzene is employed in combination with other materials. It may be mixed, for example, with sodium sulfate or thiosulfate; these sulfur-containing compounds serving to slow the volatilization of the anti-moth agent. (24) Conversely, two to five per cent of paradichlorobenzene will serve to

increase the effectiveness of hexachloroethane as an insecticide suitable for killing moths and their larvae. (25) Containing more familiar materials is a combination of: (26)

Camphor	80	parts
Paradichloroben-		,
zene	15	66
Lemon oil	5	66
		*

These are melted together very cautiously and poured into molds, or square cards may be dipped into the melted mass.

In connection with the above formula it may be pointed out that there is comparatively little demand for gum or synthetic camphor as moth combating agents. (21) In passing it may also be noted that the perfume of products scented with various oils do not annoy the moths in any way, but do appeal to the consumer. (4)

Paradichlorobenzene also finds rather frequent use in the formulation of moth sprays. Such a product has definite consumer appeal because its effects are quite apparent. When sprayed on fabrics, the volatile solvent evaporates, leaving behind a white frost which gradually disappears. With the use of the correct solvents there is no staining or fire hazard. However the danger of toxic fumes must not be disregarded.

Some sprays on the market consist solely of paradichlorobenzene (or naphthalene) dissolved in carbon tetrachloride or ethylene dichloride. One such product is said (11) to consist of:

Paradichlorobenzene..... 3 lb. Carbon tetrachloride..... 1 gal.

Mixed solvents are sometimes employed, as in the following example: (4)

Carbon tetrachloride	50	parts
Ethylene dichloride	15	66
Paradichloroben-		
zene	35	66

Sometimes kerosene or some similar light petroleum distillate (e.g. "Deobase") is mixed with the solvents. This, however, interferes with the crystallization of the paradichlorobenzene. Frosting is also re-

(Turn to Page 143)



BUT ALL CALL FOR IT... FROM HOOKER

No matter how you are accustomed to call for Paradichlorobenzene, your best bet is to call on Hooker for it.

High purity of Hooker Paradichlorobenzene has made it most popular among users—whether for fumigant, deodorant, or chemical intermediate. And because it comes in seven different sizes you need do no further processing with it. You can order just the size best suited for your needs, from "Pea No. 1" passing through 5%" Mesh on No. 2½, to the "Powdered" Paradichlorobenzene all passing through No. 32 Mesh.

TYPICAL PROPERTIES HOOKER PARADICHLOROBENZENE

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

BUFFALO AVENUE & UNION STREET, NIAGARA FALLS, N. Y.
NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.



SODIUM SULFIDE . SODIUM SULFHYDRATE . SODIUM TETRASULFIDE . CAUSTIC SODA . MURIATIC ACID . PARADICHLOROBENZENE . CHLORINE

Quaternaries In The Laundry Field

By P. G. Bartlett*

West Disinfecting Co.

OST of the applications for quaternary ammonium compounds developed so far have involved simply replacing an older type disinfectant or sanitizing agent with the quaternary as for instance, replacing hypochlorites in restaurant, dairy and food plant sanitation.

In the laundry field, however, the situation is a little different. Quaternaries are being used not as a replacement but in addition to the regular sanitary precautions. This provides a good example of using to advantage the specific properties of quaternaries to open up new fields for sanitation products and provide improved protection to public health. In the laundry, if the wash water is hot enough, and if hypochlorite bleach is used, the fabrics will be adequately disinfected although this is not always practical. Some fabrics require washing in luke warm water, and some colored fabrics cannot be bleached with hypochlorite, but whether or not the clothing is properly disinfected by routine operations, there is no residual effect to prevent recontamination. Even before clothing leaves a laundry, it has been shown that it is often recontaminated by handling. The same personnel frequently handle both the incoming and the outgoing laundry.

A quaternary treatment provides a residual bacteriostatic activity that not only assures sanitary laundry leaving a plant, but also prevents bacterial growth during use. Properly treated fabrics will show bacteriostatic activity whenever moistened, up to the time of relaundering. Of course, in the complete absences of moisture, bacterial growth is not a problem.

Quaternary treatment is es-*Before 35th annual meeting Nat'l Assn. Insecticide & Disinfectant Mfgrs., New York, Dec. 6, 1948.

pecially worthwhile for hospital laundering of bed linen, bed clothes, and doctors and nurses uniforms. It should also be recommended to commercial laundries specializing in laundering uniforms such as worn by dentists, physicians or workers in food plants and workers in pharmaceutical houses. Hotel laundries could also use quaternaries advantageously. Men's socks should be treated. The method is of particular importance to diaper service laundries. Drs. Benson and Slobody of the New York Medical College have published a report of an investigation on treating diapers with a quaternary. (*1) They attribute diaper rash to irritation by ammonia which is generated by bacterial decomposition of urine. A strong odor of ammonia as well as skin irritation is often noticed in the morning after a baby has lain in a wet diaper for a relatively long time. Benson and Slobody reported that a child may remain in a wet diaper that has been treated with a quaternary for as long as 15 hours without danger of diaper rash.

For many years physicians have recommended bichloride of mercury and boric acid rinses for treating diaper rash. The toxicity of bichloride makes its use objectionable, and boric acid has not been found very effective by most observers. Benson and Slobody found the particular quaternary which they studied not only effective and safe,

*1. A New Treatment for Diaper Rash: - Journal of Pediatrics, Oct. 1947.

but also discovered it could be concentrated as much as five times if desired for severe cases of diaper rash. It should be remembered that quaternary compounds were used in textile mills as cotton softeners before their anti-bacterial activity was generally recognized.

Process is Simple

THE process of applying a quaternary in the laundry is relatively simple. One half ounce of quaternary (on a 100% basis) is usually adequate for 100 lbs. of fabric. The quaternary is dissolved in water, and then added to the wash wheel in the final water rinse, or it may be added in conjunction with the "souring" operation. "Souring" consists of rinsing in a bath of acid salts in order to neutralize any excess alkalies from the wash solution which were not completely removed by water rinses. The ratio of quaternary to fabric is more important than dilution of quaternary in water since the germicide is absorbed by the fabric and removed from the rinse water over a fairly wide range of dilutions. There must be enough water present to cover the fabric, and time of rinsing, dilution of rinse, and amount of agitation are all important in getting even distribution of quaternary throughout the charge of clothing in the wash wheel.

Residual bacteriostatic activity of properly treated fabric can be shown by an agar plate test innoculated with staph. aureus. A

Of the new fields of disinfection being opened by the quaternaries one of the more important is that of the commercial laundry industry.

Headquarters for OIL SOAPS

coconut

soya

oil blends

jell

paste

liquid

All popular size containers including dispenser drums

E.F.DREW & CO., INC.

Chemical Specialties Division 15 EAST 26th ST. NEW YORK 10, N.Y.

Chicago: 360 N. Michigan Avenue Beston: Chamber of Commerce Building good inhibition zone of at least 5-6 mm should be obtained, although the presence of a definite zone is more important then the width of the zone. This agar plate test measures not only bacteriostatic activity but also the ability of the antibacterial substance to diffuse through the agar. Quaternaries are tightly held by the fabric and do not diffuse very readily through agar.

Organic mercurials, for example, are not substantive to cotton and do diffuse through agar more readily, but this should not be taken as proof of greater anti-bacterial activity.

Bacteriostatic action of quaternary treated fabric can also be demonstrated by immersing swatches in dilute suspensions of *S. Typhi* culture, then removing to a sterile petri dish into which nutrient agar is poured immediately.

Practical tests have been run by taking samples of treated and untreated cloth from a laundry after ordinary handling and incubating in sterile broth. Still another method of comparing treated and untreated samples consists of exposing each to air borne contamination, then placing samples in sterile distilled water, or sterile saline solution shaking vigorously, and then incubating a portion of the extract in nutrient agar. Any of these methods will show the bacteriostatic activity of fabric uniformly treated with quaternary.

Value as Deodorants

OUATERNARIES have some value on fabrics as deodorants as well as anti-bacterial agents. It has been reported that soiled diapers on a truck, being returned to the diaper service laundry are much less odorous when treated with quaternary before being sent out. In another practical experiment treated clothing was soiled and returned to a laundry and was deliberately allowed to remain damp for several days. Ordinarily a pile of damp soiled clothing will develop putrefactive odors within that time, but no odor at all was observed in this case. There was no mildew on the clothing either, although conditions were favorable for mold growth (high humidity and high temperature). It would be a misleading exaggeration to make any mildew proofing claims, but there is evidence of some increased mildew resistance.

Quaternary solutions can be mixed with dry cleaning fluids tco, forming emulsions which are stable enough for dry cleaning use. The addition of 2 oz. of quaternary (100% basis) to enough dry cleaning fluid for 100 lbs. of clothing will sanitize the clothing, give it residual bacteriostatic properties and eliminate perspiration and putrefactive odors. It will not eliminate the odor of the dry cleaning solvent.

The use of quaternaries in neighborhood automatic laundry stores has been given some attention by a number of people. The main problem involved here is one of timing. In order to do an effective job, the quaternary must be added in solution form just at the start of the final rinse. If added earlier there is a danger of contamination by soap. If added too late, even distribution throughout the load will not be obtained. These neighborhood stores do not have sufficient supervision of the machines to add quaternary at just the proper time, so that an automatic dispensing device attached to each machine would be required to give proper treatment.

This description of laundry sanitation with quaternaries is just one example of how we may broaden the field of use for these newer type germicidal agents. We might mention briefly in conclusion a few other potential applications where further study might prove profitable: First, a sanitizing wash for fruits and vegetables prior to quick freezing, or prior to shipment to market. In some cases micro organisms may be responsible for loss in quality before the food product is frozen, or during shipment to market. Before quaternaries can be used extensively for such purposes, we need additional data on chronic toxicities or a method for insuring complete removal of

*2. Committee Report: Journal American Public Health Association, Vol. 38 No. 3, p. 409, March 1948.

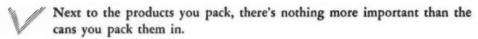
the quaternary from the food product after the sanitizing wash. Secondly, some preliminary work has been done on the preparation of germicidal ice containing quaternary for use in refrigerated freight cars. This work was very promising although here again more information on chronic toxicity of quaternaries is needed since quaternary solution comes directly in contact with food through melting of the ice. Thirdly, it has been demonstrated (*2) that a very light film of oil on blankets cuts down lint in the air in hospitals and thereby reduces cross infection, since bacteria are carried by the lint. The oiling is done in the hospital laundry by treating blankets with an oil emulsion. A combination of non-ionic emulsifier and quaternary provides an emulsion that will break in the wash wheel allowing better oil deposition and at the same time will introduce some quaternary on to the blankets.

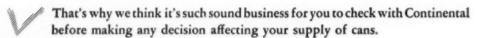
These and similar new applications for quaternaries may become more significant in the future than direct competition with the established products such as hypochlorites, coal tars and pine oils, which are generally effective as used, but are some what more limited in the scope of their usefulness.

Compositions containing 10 per cent of ortho-nitrobiphenyl and 20-50 mg. of pyrethrins per 100 ml. of product, give an effective fly spray in an oil base. A small quantity of 2-phenylcyclohexanol is added to retain the ortho-nitrobiphenyl in solution. H. L. Morrill and D. J. Weinman, to Monsanto Chemical Co. U. S. Patent No. 2,435,690.

Rubber dusts and ground plastics were found to be good carriers for such fumigants as ethylene dichloride, chloropicrin, and carbon disulfide. The time that the fumigants were retained in the rubber dusts compared with pyrophyllite was from three to 20 times as great. C. W. Murray, to the U. S. Secretary of Agriculture. U. S. Patent No. 2,440,781.

Check with Check ENTAL CONTINE





It costs nothing to talk things over and ...

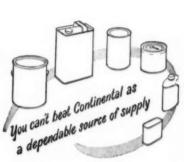
We may be in a position, because of our size and flexibility, to assure you a dependable supply.

We may be able to give you faster service.

We may be able to save you money by suggesting a change in your packing operation.

Or we may be able to help you with a knotty technical problem.

Why not "Check with Continental" today?



CONTINENTAL
100 EAST 42nd STREET,



CAN COMPANY

NEW YORK 17, N. Y.

MOTH PRODUCTS

(From Page 137)

duced when the quantity of this agent is lowered. Such would be the case in the following spray which is recommended (15) for treating upholstered furniture that has become infested with moths:

Paradichloroben-

1 part zene...... Carbon tetrachloride.... 25 parts Ethylene dichloride.....

Carbon tetrachloride used at a rate of eight to 12 pounds per 1,000 cubic feet makes a satisfactory fumigant against moths. A mixture of ethylene dichloride and carbon tetrachloride in a ratio of 3:1 may also be used as a fumigant. Employed at the rate of two fluid ounces per each five cubic feet, the mixture was effective against the eggs and larvae of clothes moths and carpet beetles. (4) A mixture of equal parts of the two solvents is also effective for destroying moths. It is advised (26) that 20 to 25 pounds of such a mixture be used per 1,000 cubic feet of space for 24 hours at 65 to 75°F. Combinations of this sort produce vapors that are noninflammable and nonexplosive, and are therefore free from fire hazard. This is not the case, however, with carbon disulfide, which is suggested (7) for the emergency fumigation of trunks and closets. In the presence of carbon disulfide vapors, caution against fire is important. In a class by themselves, and applicable only by experienced and licensed operators, are the highly toxic mothicides such as hydrocyanic acid gas and chloropicrin.

(To be Concluded)

Bibliography

- Anon.: Soap & Sanit. Chem. 19:109, Sept. 1943.
- Sept. 1943.
 Mail, G. A.: Chem. Ind. 60:790, 1947.
 Freedman, E.: Soap & Sanit. Chem.
 18:107, Jan. 1942.
 Mallis, A.: "Handbook of Pest Control," New York, MacNair-Dorland,
 1945, pp. 207-235.
 Snelson, T. J.: Textile J. Australia
 23:856, 1938.
 Apon: Dry Goods Economics May 25.
- 6) Anon.: Dry Goods Economist, May 25,
- Back, E. A.: "Clothes Moths," Leaflet No. 145, Washington, U. S. Dept. Agric. 1947, 8 pp.

- Phipps, I. F. & Law, P. B.: Textile J.
- Australia 22:609, 1947. Harrington, L.: Your Garden & Home,
- May, 1948, p. 16. Reumuth, H.: in "Moth-proofing of Woolen Materials in Europe," New
- York, Textile Research Inst., 1946, pp. 7-28. Schwarcz, L.: "Sanitary Products," New York, MacNair-Dorland, 1943, pp. 187-192.
- Back, E. A.: Textile World 88:56, Feb. 1938.

- Feb. 1938.
 Billings, S. C.: J. Econ. Entomol. 29:1014, 1936.
 A no n.: "Pharmaceutical Recipe Book," Ed. 3, Washington, Am. Pharm. Assoc., 1943, p. 417.
 Crowley, C. A.: "Money Making Formulas," Chicago, Pop. Mech. Press, 1939, pp. 118-9.
 Chuck, F. Y.: U. S. Pat. 2,376,327, 1945.
- 1945
- Stennerson, H.: Chem. & Eng. News, 17)
- Stennerson, H.: Chem. & Eng. News, 26:1190, 1948.
 Herrick, G. W. & Griswold, G. H.: J. Econ. Entomol. 26:446, 1933.
 Frey, W.: Arb. physiol. angew. Entomol. Berlin-Dahlem 6:189, 1939.
 Kling, A. L.: U. S. Pat. 2,390,887, 1945. 18)
- 1945
- Freedman, E.: Soap & Sanit. Che. 24:123, July 1948.
 Perrin, M.: Bull. acad. med. 125:302, 21)
- 221
- Zupko, A. G. & Edwards, L. D.: (through) Drug Topics, Aug. 30, 1948, 23)
- Schmolka, H.: Brit. Pat. 567,002,
- von Philipp, H.: U. S. Pat. 2,350,814, 1944
- Bennett, H.: "Chemical Formulary," New York, Chem. Publ. Co., Vol. IV-p. 113; Vol. VI-p. 497; Vol. VIII-p. 8.

MARKET . . .

(From Page 65)

of stabilization at reduced levels. Increases were recorded recently by natural Italian bergamot oil, which rose five cents a pound. Natural oil of wintergreen also moved forward from its previous price level, a course that was also followed by menthol. Declines were registered in Ceylon citronella, and cassia oil. Changes in the prices of aromatic chemicals have been few recently, the single exception being a reduction in the price of anethol.

Linco Names Parks

Appointment of A. C. Parks as sales manager of Linco Products Distributing Co., Chicago, was announced recently by the firm, which manufactures household bleach and other household chemicals. Parks was formerly assistant merchandising manager for the western

LAUNDRY SOAPS

(From Page 44)

teristics, I don't know. That is a problem we have never really investigated, but there is need for more data as to the results obtained with soaps in these temperature ranges, because I am sure we are going to work in them more than we have in the past.

Question: Is there any change in the efficiency of detergency after the physical change, when the soap temperature is lowered following the boil?

Answer: It is difficult to say. The purpose of putting in that boil is to produce a highly detergent condition and, presumably, at that point, we have suspended practically all the soil, or loosened up all the difficult soil. I would assume that simply reducing the temperature again has lowered the general rate of detergency. I am not sure, but I think so. but I think so.

When you come back to the When you come back to the bleaching operation at a lower tempera-ture, so that you can bleach properly, your suds level comes up, but is probably due to the fact that you have reduced your temperature, your detergency rate has been reduced. That would be my opinion.

Question: That is due to differences in temperature?

Answer: Yes; temperature is a very powerful factor with respect to detergency within the range in which we work. As one man put it to me one day, it is probably the biggest single controlling factor and of itself is probably more important than alkali usage conditions, or alkali type. It is more important, probably, than the actual type fo soap. It is such a highly controlling factor that variations in temperature must be taken into consideration very closely, and it is therefore difficult to evaluate the question you ask.

I would say that the temperature itself is so important that probably the actual detergency level would be reduced when you drop back down again, even though the suds level came up.

and southwestern district of the Glass Container division of Owens-Illinois Glass Co., Toledo.

Weisman Back from Europe

J. L. Weisman, director of sales for Felton Chemical Co., Brooklyn, recently returned from a two months' trip to Europe, where he visited suppliers in Southern France and Italy. He also studied the company's distribution in Sweden, Holland, Switzerland, France and Italy. Mr. Weisman said that conditions are improving rapidly on the continent and that the outlook is much better than two years ago, as a result of Marshall Plan Aid.

The STANDARD of Comparison

FRANKLIN'S complete line of maintenance materials - floor wax, cleaners, furniture polish, automobile wax and polish, metal polish, etc., available under your private label.

TOPS..

FOR FLOOR CLEANING FOR REMOVING WAX

FOR FLOORS

ANKLIN'S

FRANKLI RESERVEN COMPANIE AND SELECTION OF THE SERVEN

RUBBER GLOSS

A short history of

Janitors Supply House, Inc.

ROBABLY nothing better illustrates the growth and expansion of Janitors Supply House, Inc., Baltimore, than its recently issued 180-page, four-color, 73/4 x 101/2 inch, illustrated catalog. The company's first catalog, issued 30 years ago, contained 32 pages, not including cover, was printed in black and white only, and was illustrated with correspondingly fewer photographs than are found in the latest number.

Janitors Supply House, Inc., was incorporated under the state laws of Maryland in 1913. The firm had been founded three years earlier by Walter E. Kriel and J. Glenn Tracey. Set up as a local sanitary supply house, the firm back in its early days had three employes including the two founders; a wagon and a team of mules. Mr. Kriel, who is still active in the concern as its president, handled the manufacturing end and took care of local business, while Mr. Tracey, whose son Walter K. is now vice-president, traveled, making several trips a year as far south as South Carolina. In those days customers usually purchased a year's supply of sanitary supplies at one time.

Gradually the business expanded, until today the firm occupies approximately 80,000 square feet of floor space for its warehouse, showroom and manufacturing, all located at 600 W. Pratt St., Baltimore. The company employs 32 persons, including 10 salesmen, who cover Maryland, Virginia, West Virginia, North and South Carolina. In addition, Janitors Supply House operates a catalog mail order business in Florida, Georgia and Alabama. Many of the institutions and firms using "Jan-O" sanitary and maintenarce supplies are shown in the latest catalog, which includes a ninepage listing of products made or distributed by the firm.



WALTER E. KRIEL President-Founder

WALTER K. TRACEY

T. J. PICK Sales, General Mgr.

Some idea of the growth of the company's business may be gathered from the fact that last year its sales approached the half-million dollar mark.

About 5,000 copies of the latest catalog have been distributed to hospitals, hotels, institutions, office buildings and industrial firms in the southeastern section of the United States served by Janitors Supply House. W. K. Tracey, vice-president, designed the lastest catalog.

In addition to Mr. Kriel and Mr. Tracey, other officers of the firm include T. J. Pick, sales and general manager; Howard Loftus, secretary and Melvin White, assistant sales manager.

In the nearly 40 years that have passed since the founding of the company, among other changes that have taken place is the replacement of the wagon and mule team for local deliveries by a fleet of three modern motor trucks.

Products manufactured by Janitors Supply House include soap, waxes, polishes, deodorants, insecticides, scouring powder, dishwashing compound, floor finishes, theatre spray and drain pipe solvent. Among

(Turn to Page 151)





Note these specifications... Compare them with those of any other emulsifiable wax!

EMULSIFIABLE Grown Quality WAXES

Petrolite EMULSIFIABLE WAXES possess the hardness, high melting points and glossiness common to all the Petrolite Micro-crystalline waxes. They are processed petroleum derivatives with appreciable acid and saponification values. They form stable, translucent emulsions when combined with the common emulsifying agents.

We at Petrolite believe that Crown Quality 23 and 36 are the best emulsifiable waxes available today. We invite you to make comparisons and prove this to your own satisfaction. Complete information, samples and technical formulation assistance is yours for the asking.

CROWN QUALITY NUMBER	MELTING POINT °F	PENETRATION WITH 100 GRAMS	COLOR N.P.A.	ACID NUMBER	SAPONIFI- CATION NUMBER
23 36		6 Maximum 8 Maximum			

180/185 6 Maximum 4½ to 6 20 to 25 55 to 65 180/185 8 Maximum 5½ to 8 30 to 35 85 to 95

Petrolite Emulsifiable Waxes are ideally suited for use in "self-polishing" floor dressings. Many no-rubbing waxes

properties and high resistance to water spotting.

Petrolite Emulsifiable Waxes are generally compatible with all the common ingredients in emulsion polishes:
Carnauba, Candelilla and Ouricuri waxes, and numerous resins. Complete technical assistance is available to customers on special blending problems.

now produced commercially using these waxes show distinct advantages in long wear, high gloss, self healing

QUANTITY SHIPMENTS IMMEDIATELY AVAILABLE

PETROLITE Grown WAX
PETROLITE CORPORATION, LTD . WAX DIVISION

30 Broad St., New York 4

REFINERY: Box 390, Kilgore, Texas

PW .49.1

TECHNICAL BRIEFS

From Current Literature in the Sanitary Products Field

Bactericidal Rinse

Addition of a small amount of a fluorescent phthalein dye such as fluorescein or uranin, to a rinsing solution containing a quaternary ammonium compound to serve as inhibitor of bacterial growth, makes possible the direct determination of the point when the antiseptic effect is no longer operative. As soon as the phenol coefficient of the composition has become reduced to an unsafe value by contamination, there is a marked and abrupt change in color and fluorescence. H. R. Broll, to Fuld Bros., Inc. U. S. Patent No. 2,449,274.

Factors in Spray Testing

Pyrethrum sprays produced higher mortalities among houseflies starved for one to six hours prior to exposure than among flies given continuous access to food before exposure. Dosages of spray retained by individual flies after exposure varied with starvation time. Starvation of flies caused by interrupted feeding during sampling and pretest treatment may introduce unnecessary variability between samples for insecticidal tests. A starvation procedure is suggested for increasing the susceptibility of houseflies to pyrethrum sprays, without affecting the rate of change of fly mortality with pyrethrum concentration. R. W. Kerr, Australian 7. Sci. Research B1, 676-92 (1948); through Chem. Abs.

Determination of DDT

Recent new methods and modifications of existing methods for the determination of DDT are briefly discussed. A collaborative study of the tentative method for determination of total chlorine in DDT showed it to be satisfactory. Use of isopropyl alcohol instead of benzene as diluent eliminates the time-consuming step

of evaporating the benzene from the aliquot before adding the isopropyl alcohol, and gives as accurate results as the original method.

Use of benzene in the extraction of dusts should be retained to ensure complete extraction of the DDT. A technique is described for the determination of total chlorine in emulsions containing DDT, solvent, emulsifying agent, and water. It consists essentially in diluting a sample containing about 0.75 gram of DDT to 100 ml. with 99 per cent of isopropyl alcohol, evaporating completely the isopropyl alcohol and water from a 10-ml. aliquot, and proceeding as for mineral-oil sprays containing DDT in presence of organic thiocyanates. E. E. Fleck, 7. Assoc. Offic. Agr. Chemists 31, 368-72 (1948).

Quinolinol Fungicides

Results of fungicidal tests of 8-quinolinol and eleven of its derivatives by two different methods are given. Substitution of chlorine or bromine for hydrogen in the five and seven positions reduces the toxicity of 8-quinolinol, while substitution of nitro groups in these positions eliminates toxic action entirely. Copper 8-quinolinoate is a very effective fungicide against spores of Stemphylium sarcinaeforme. C. L. Mason, Phytopathology 38, 740-51 (1948).

Assay of Fumigants

An apparatus for the assay of fumigants utilizes a block of "Transite," provided with an opening one-half inch in diameter at the top to receive an 18-mm. crucible and one inch in diameter at the bottom to receive a Ni-chrome wire resistance element disposed below the bottom of the crucible. The unit is placed under a 15-liter battery jar with the object to be fumigated,

and 0.1 gram of solid fumigant is vaporized. Ten samples can be tested in two hours by one operator on a ten-unit series. J. H. Standen, *Contribs*. Boyce Thompson Inst. 15, 127-9 (1948).

Synthetic Insecticide

The German in secticide developed during the war as an alternative to DDT, diethyl Paranitrophenyl thiophosphate, is termed E.605. Information concerning it appears in B.I.S. Final Report 1808. The crude product is used (1) as a dust containing two per cent of E.605 and 98 per cent of talc; (2) as a miscible oil concentrate containing 70 per cent of E.605 and 30 per cent emulsifier; and (3) as a more dilute miscible oil containing 10 per cent of the concentrate in (2) and 90 per cent of water. The concentrate used in spraying is 1:10,000 of crude E.605.

E.605 is stated to be effective against Colorado beetle, aphis in general, flea beetle, codling and winter moths, caterpillars in general, bedbugs, and flies. It is claimed to kill many more insects than DDT, but will not replace the latter for control of domestic pests such as the house fly. Although very effective against bedbugs, the odor of the material and its toxicity to warmblooded animals restricts its use in that connection. Where the material can be used, it is more economical than DDT. Manufacturing Chemist 19, 548-9 (1948).

Analysis of ANTU

Pure "Antu" (alpha-naphthyl-thiourea) contains 13.86 per cent of nitrogen and 15.84 per cent of sulfur. Examination of commercial products received to date showed a higher percentage of "Antu" calculated from S than from N. In routine examination for purity, it would seem preferable to determine total nitrogen rather than total sulfur. The insolubility of "Antu" in water renders the application of common reactions of thiourea difficult.

Examination of prepared "Antu" rat poisons was carried out as follows: Digest or reflux an amount

L Lift

Liquid Soap Sales with Moore Dispensers

Your Liquid Soap profits will go up—but quick—with the help of Moore Dispensers. They're always on the job giving customer satisfaction and selling soap for you. That's because top engineering ability and a half century of research have developed dispensers that operate smoothly without clogging or leaking.

PEER 100—Liquid. Sales resistance to this machine is low. Handsome, durable, smooth-operating—the lowest priced dispenser of its quality on the market. Peer 100 offers an excellent chance to in-

troduce your soap to new users.

Write for Memo Sample and complete price list







WITH
"LIPARI"

ITALIAN PUMICE

No other abrasive compares with Italian Pumice for:

Abrasive Cleansers Mechanics Hand Soaps Detergent Powders

"LIPARI" Italian Pumice is economical too because it breaks down slowly and abrades without scratching. Your product will not "mud-up" or produce an undesirable sludge.



Talc — Clay — Silica — Tripoli Volcanic Ash — Bentonite

Write for free folder
"THE STORY OF PUMICE STONE"

CHARLES B. CHRYSTAL CO., Inc.

55 PARK PLACE, NEW YORK 7, N. Y.

Jersey City. N. J.

Over 50 Years of Dependable Service

of sample containing about 0.2 gram of "Antu" with 50 ml. of acetone in a 250-ml. Erlenmeyer flask for 15 minutes, filter, wash with acetone transfer the filtrate to a 500-ml. Kieldahl flask, evaporate the solvent, determine total nitrogen by the Kieldahl method, and use factor 7.215 to convert to alpha-naphthylthiourea. If much greasy material is present, it can first be removed with petroleum ether. If "Antu" has been incorporated in material insoluble in acetone, such as starches or sugars, it is advisable first to digest with about 25 ml. of water, then to add 150-200 ml. of acetone, and proceed as above. J. W. Elmore, 7. Assoc. Offic. Agr. Chemists 31, 366-8 (1948).

Issues Wax Standard

Specifications for micro-crystalline petroleum wax are contained in specification No. 8, recently issued by the board of standards of the Toilet Goods Association, New York. Color, odor, fracture, solubility, melting point, free acids and alkalis, sulfur and sulfides, ash, arsenic, and lead specifications are included. Methods for testing also are given.

New Plant Insecticide

A pungent isobutylamide of an unsaturated C12 acid has been isolated from the bark of southern prickly ash, Zanthoxylum clavaherculis L. The substance, for which the name "herculin" is proposed, has approximately the same order of paralyzing action and toxicity to house flies as the pyrethrins, and is also toxic to several other species of insects. Herculin has been shown to be N-isobutyl-2, 8-dodecadienamide. It is closely related to several other pungent isobutylamides previously isolated from plant materials. M. Jacobson, J. Am. Chem. Soc. 70, 4234-7 (1948).

Fly-proofing

A process is described for control of flies, roaches, and other insects in restaurants, stores, etc., by use of emulsions containing pure gamma-benzene hexachloride. G. R. Chamlin, Pests 15, No. 5, 18, 20, 22.

British Report Reviews Chlordane

CHLORDANE has the empirical formula C₁₀H₈Cl₆. The pure, compound is 1,2,4,5,6,7,8,8'-octachloro-D, G-methanoca, D, G, G a-tetrahydroinane. In a highly refined state it is a viscous, nearly odorless liquid with a boiling point of 175°C. at two mm. pressure. It is soluble in most organic solvents, including refined kerosene. Chlordane is marketed as "Velsicol 1068" by the Velsicol Corp., Chicago, and as "Octa-Klor" by Julius Hyman & Co., Denver.

The insecticidal action of chlordane is by contact, ingestion, and inhalation. It is generally somewhat less toxic to man and warmblooded animals than DDT. For household use only the refined grades should be used. It is effective against common household pests in somewhat lower concentrations than DDT, but its residual toxicity is not so persistent; organic thiocyanate compounds such as beta-buty-oxy-beta-thiocyano-diethyl ether and fenchyl thiocyanoacetate should be added to space sprays.

For Fleas on Pets

Two per cent of chlordane on an inert powder is recommended for treating both cats and dogs. When dusted with this, the animals remain free from fleas for several weeks. No harmful effects have been observed when powder is licked from paws or body. Knockdown agents are unnecessary.

In Insecticidal Shampoos

An insecticidal shampoo based on chlordane can be used for treating head lice. For example, 20 parts of coconut-oil fatty acids are saponified with 14 parts of triethanolamine at 90-95 °C. Into the soap five parts of a refined grade of chlordane are incorporated. This is used as an ordinary shampoo would be; shampooing is repeated over several days.

For Mothproofing

From three to five per cent of chlordane on an inert powder such as pyrophyllite, plus five to ten per cent of para-dichlorobenzene, is

dusted on rugs, woolen goods, etc., as an effective moth-proofing agent.

For Redbugs

A one-two per cent solution of chlordane is an effective spray against bedbugs. The two per cent solution can be used against carpet beetles. A. Davidsohn, *Manufacturing Chemist* 19, 241-4 (1948).

Synergist for Pyrethrum

A synergist for use in combination with pyrethrum is 1, 3-diphenoxypropane. E. R. McGovran and W. A. Gersdorff, to the People of the U. S. U. S. Patent No. 2,441,433.

DDT as House Spray

For control of mosquitoes and houseflies, DDT is at present more suitable as a residual house spray than a number of its competitors, including benzene hexachloride, "Chlordane" TDE, and chlorinated camphene. Wm. M. Upholt and S. W. Simmons, *Pests 16*, No. 7, 12, 14, 16 (1948).

Pyrethrins Extraction

A method is described of quantitatively extracting the pyrethrins from undried pyrethrum flowers, using petroleum ether only as solvent. The flowers are ground in a rod mill with the solvent and then extracted in three stages. Samples of the same flowers were dried by natural and by the most favorable artificial means, and a third sample in a commercial drier. The total pyrethrins in the undried and the dried flowers were compared on a moisture-free basis. It was found that the undried flowers contained about the same amount of pyrethrin I and about 10 per cent more of pyrethrin II than the same flowers dried by the most favorable natural or artificial means, and three to four per cent more of pyrethrin I and 12-13 per cent more pyrethrin II than flowers dried by one particular commercial method. M. G. Edwards, J. Soc. Chem. Ind. 67, 379-82

Reilly Coal Tar Chemicals

FOR THE SOAP AND DISINFECTANT INDUSTRIES

CRESYLIC ACIDS: The entire range—in standard grades or to specifications.

CRESOLS: U.S.P., Meta, Para, Ortho, and special fractions—to all specifications.

XYLENOLS: Low boiling, high boiling, symmetrical.

NAPHTHALENE: Crude and refined prime white —in chipped, crystal, flake and powdered form.

Write or wire for information on any of these products.

TAR ACID OILS

In all grades, from 10% to 75% tar acid content, or of specified phenol coefficiency, carefully blended.

REILLY TAR AND CHEMICAL CORPORATION

Merchants Bank Bldg., Indianapolis 4, Ind. 500 Fifth Avenue, New York 18, New York 2513 S. Damen Avenue, Chicago 8, Illinois



* Excellent for:
Hand Dishwashing
Laundering - All Fabrics
General Cleaning

Walls, Woodwork, etc.

New!! Improved!!

* ALL-PURPOSE

LEADER FLAKES

Contains 75% Soap Plus Water Softeners

- The New Light Color Increases Customer Appeal.
- The Attractive Price Assures Customer Acceptance.
- The Superior Quality Will Win Repeat Orders.

VERY MILD • SUDSY • QUICK RINSING FINE FOR HARD WATER AREAS

Write for Gree Sample Today!

National Milling & Chemical Company

Industrial Soap Products Since 1896

4603 NIXON STREET . PHILADELPHIA 27, PA

WEBB'S CITY

(From Page 47)

figure also includes about 10,000 aerosol insecticide bombs sold within an eight-month period during 1948.

Moving more than 1,000,000 bars of soap across its sales counters annually, Webb's City soap department is believed to be one of the largest soap retail outlets in the United States.

Some idea of the growth of the department in the last three years under Mr. Amaron's management may be gleaned from the fact that in 1940 the department purchased 361 c a s e s of C o l g a t e-Palmolive-Peet Co. products; two years later the total had risen to 1,540. In 1944, 3,300 cases of C-P-P products were sold, which was about half the 1947 sale of 6,775 cases. The 1948 total was expected to reach 8,000 cases.

Webb's City, begun as a 20 x 30 foot drug store 24 years ago, has expanded greatly over the years until it now covers several city blocks and houses 50 departments. A number of national magazines have published articles on the store, its methods of sales promotion and its founder, J. E. Webb. Located in the winter resort city of St. Petersburg, with its 100,000 permanent population, to which may be added seasonally between 100,000 and 150,000 vacationers, Webb's City capitalizes on and promotes the belief that per capita soap consumption in its home town is about the highest in the United States. "Doc" Webb is quick to promote the idea that cleanliness is next to godliness and that Webb's prices are first to drop and last to rise.

The soap and related sanitation chemicals department in Webb's City is located in the rear on the ground floor of the store's main building. It is Mr. Amaron's merchandising effort to attract and then draw customers by the thousands to his particular department. The store's aim is to have on hand every nationally known detergent, insecticide and insect repellent. This is

in keeping with the store's policy that as with other merchandise customers prefer nationally advertised soaps, insecticides and related products.

An other type of product widely sold by Webb's City is water softeners, since St. Petersburg and its adjoining area are supplied almost exclusively with hard water.

The attention of St. Petersburg dwellers is kept focussed on Webb's City soap and sanitary chemicals department via daily advertisements in both of the city's daily newspapers. Since the store attracts almost 30,000 people every day, every effort is made by mass displays, unusual and eye-compelling signs, photographs and murals to direct a large proportion of store's customer-attendance to the department managed by Mr. Amaron. Unit sales volume is increased by leading customers through many departments of the store, where they stop to shop, on way to the store's renowned soap department.

Recently Mr. Amaron, soap department manager, stated that, based on a close study of customer appeal, he believes the premium appeal to be waning. With money becoming scarcer, the use of premiums or gifts may again catch the consumer's fancy. In merchandising soaps and related sanitary chemicals, as in every other type of product, Mr. Amaron is of the firm belief that the retailer always must be on his toes to let his customers know of his merchandise, of its quality and of its reasonable price.

Webb's City is open every day in the year from 7:30 a.m. until 11 p.m. Besides selling practically every soap product made in the United States, the department dispenses the best known insecticides, cleansers, waxes and polishes, mops, brooms and other cleaning utensils. To move these products in volume and quickly, Mr. Amaron has nine experienced salesmen working with him, who not only know how to handle customers, but, what is even more important, have a wide knowledge of soaps and the other products sold in the department.

Western Package Show Dates

The second annual Western Packaging Exposition will be held in the San Francisco Auditorium Aug. 9-12. It is estimated about 125 firms will exhibit machinery, equipment, supplies and materials in the fields of packaging, packing and shipping. A conference on packaging, packing and shipping will be held at the same time as the show.

JANITORS' SUPPLY ...

(From Page 145)

the nationally known products distributed by the firm are: "Dixie Cups," "Witt" cans, "Simoniz" wax, "Bab-O", "Holt" floor machines, "General Detroit" fire extinguishers, "White" and "Simplex" mop outfits, "Vornado" fans; "Sanette" waste receivers, "Bissell" carpet sweepers and over 2,000 other products, according to the firm's letterhead.

The company's trade-mark, "Jan-O" was registered in 1929 and later renewed in 1949.

As members of the National Sanitary Supply Association, Janitors Supply House carries the association's emblem on its letterheads and in its catalog.

SOAP PLANT OBSERVER

(From Page 91)

lons. Proportioning pumps are also available but are used chiefly in continuous operations and form a part of such systems. Scales are by far the most satisfactory means of transfer from an accounting point of view. Types are available for any purpose. One installation noted weighed crude from an evaporator. The entire drop tank was on scales which were of the dial type calibrated to read from one pound to 1000 lbs. in pound units with an auxilliary set of weights to cover up to 5,000 lbs. in one thousand pound units. Another installation weighed soap foots to the kettle. The scale tank was filled and emptied through a flexible coupling. In toilet soap manufacture, the soap chips should



liquid

FLOOR WAX

can be shipped in any temperature

The quality of KNOXALL Liquid Floor Wax is not affected by freezing-but returns to its original factory guaranteed liquid stage without separation or jelling.

WRITE FOR Sample

AND LITERATURE . . .

This New KNOXALL Product is the result of years of careful research and laboratory tests. KNOXALL Liquid Floor Wax is suitable for every type of finish, can be applied smoothly and evenly and does not water-spot. Gives depth of luster and an appearance of a hard, glass like finish—without buffing.

also MANUFACTURERS OF:

- · PURE COCOANUT OIL LIQUID
- SOAP VEGETABLE OIL-PASTE AND JELLY VEGETABLE OIL-PASTE AND JELLY SOAPS
 LIQUID SCRUB SOAPS, BAR SOAPS
 POLISHES AND WAXES
 GREASE SOLVENTS
 RUG SHAMPOO
 TEXTILE OILS
 DISCOURTED TABLES

 BUSINESSTANDS

 TEXTILE OILS

- PINE DISINFECTANTS
 PRODUCTION CHEMICALS BY SPECIAL FORMULATION













when they come in INLAND STEEL CONTAINERS

Then your customers get your product just the way it leaves your plant. That's what they want. That's what they get when you ship in drums and pails made by Inland Steel Container Co.

Your customers value the protection of sturdy, leak-proof Inland Steel Containers. They know that the thinnest liquids, semisolids, plastics, crystals and powders are safe in transit - in spite of rough handling. A continent away, they get the same quality they could have at your shipping platform. And they get it in a package designed for easy handling and easy re-sealing.

Deliver your products "Factory Fresh" with Inland Steel Containers. Drums and pails can be supplied with your trademark in full color - Steri-Sealed to prevent contamination, loss of color, aroma, or flavor. Write for complete details today.

Inland Steel Container Co.

Container Specialists

6532 South Menard Avenue, Chicago 38, Illinois NEW ORLEANS Plants at: CHICAGO JERSEY CITY .

be weighed into the amalgamator. A convenient way is to have the bins on the floor above with openings extending through the bottoms. A small traveling scale hopper passes back and forth filling from any bin into any amalgamator. This gives control with flexibility of blending, assures uniformity and enables strict accounting for all losses in the de-

CRACK FILLERS

(From Page 131)

Sulfur	35	1/2 lb.	
Aluminum			
stearate	4	lb.	
Powdered silica	71/	lb.	
Lamp black	2	lb.	
Wood flour	5	lb.	2 oz.
Sugar	1	lb.	6 oz.

Asphaltum		11 oz.
Rubber	. 2	lb. 13 oz.
Paraffin oil		pint

Such a thermoplastic material is used for filling cracks, fissures and dents such as occur in wood, stone, cement, rubber or metal. It is easily applied by means of a heated metal tool, like a soldering iron. When thus applied it will adhere firmly and on cooling to normal temperature it will harden without cracking or peeling from the surface to which it is applied. The hardened material may easily be sanded to prepare it for a surface finish of paint, enamel or varnish.

Before concluding mention may also be made of heat-curing types of crack fillers. According to one source, (6) a product of this kind can be made by mixing wood flour and phenol-formaldehyde resin to form a paste. The resulting material is suitable for dark colored

applications. A light colored filler can be made by substituting ureaformaldehyde resin for the phenolic resin. Heat curing can be done conveniently by using infra-red lamps.

Bibliography

- Reineke, L. H.: "Wood Flour," Forest Prod. Lab. Report No. R1666-9, Forest Service, U.S.D.A., Aug. 1947, 18 pp.
 Walker, P. H. & Hickson, E. F.: "Paint Manual," Build. Mat. & Struct. Report BMS105, Washington, U. S. Dept. Commerce, 1945, p. 151.
 Lammers, J. A.: Verfkroniek 13:156, 1940 (through) Chem. Abstr. 35:7060, 1941.
- 1941.
- Forrester, G. P.: "Pharmaceutical Formulas," Vol. II, Ed. 10, London, Chemist & Druggist, 1944, p. 934. Bennett, H.: "Chemical Specialties," New York, Chem. Publ. Co., 1946, pp. 178-9, 396-7.
- pp. 178-9, 396-7.
 Bennett, H.: "Chemical Formulary,"
 New York, Chem. Publ. Co., Vol.
 II-p. 27; Vol. III-p. 5; Vol. IV-pp.
 12, 25; Vol. VIII-p. 297.
 Stodder, C. K.: U. S. Pat. 1,785,053,
 1930; Brit. Pat. 365,265, 1930.
 Crowley, C. A.: "Money Making
 Formulas," Chicago, Pop. Mech.
 Press. 1939, p. 145.

- Formulas," Chicago, Pop. Mech. Press, 1939, p. 145. Phillips, N.: Ger. Pat. 666,764, 1938. Werth, F.: Brit. Pat. 476,999, 1937. Claytor, B.: "Finishing Floors, Walls and Woodwork," Bull. C-112, Extension Service, A. & M. College of Texas, 1936, 8 pp. Neufeld, C. W.: U. S. Pat. 2,096,684, 1937.
- 12)
- Hiscox, G. D. & Sloan, T. O.: "Twentieth Century Book of Formu-las," New York, Henley, 1938, p. 565. Griffiths, M. E.: U. S. Pat. 1,838,618,

- U. S. Pat. 1,947,438. Esselen, G. J.: U. S. Pat. 2,131,371, 16)
- Kennedy, J. A.: U. S. Pat. 2,284,432,

CHEMICAL DISINFECTION

(From Page 125)

sence of pneumococci in dust was stressed by Stillman (33) as early as 1917; he recovered Types I and II from the floor dust of homes in which corresponding cases of pneumonia occurred. Pneumococci were found in viable form in dust one week to one month following their dispersal (34). Recently Hodges and McLeod (35) reported that the pneumococcal types found in the dust of barracks and school rooms reflected the prevailing types observed in the throats of carriers using these premises. Eagleton (4) found meningococci upon premises housing carriers.

Business Opportunity.



"What I wouldn't give right now for a good insecticide!"

New wax type GLASS POLISH

glass cleaner and waxer . . . newly developed and different product . . . in 55 gal. drums and other standard packages for the trade . . . ask for sample of this new product.

FLOOR WAX COMPARE

The consumer wants high lustre at a competitive price . . . he gets it in our #1948 Wax . . . compare its high gloss against any other wax . . . send for sample and price . . . make your own comparison test.

BOSTON CHEMICAL INDUSTRIES, INC.

65 E. BROOKLINE ST.

BOSTON 18, MASS.

ჶჶჶჶჶჶჶჶჶჶჶჶჶჶჶႦ



APPLICATIONS: Industrial Plants, Public Buildings, Office Buildings, Schools, Theaters, Stores, Gasoline Stations—also a practical convenience for the home laundry and kitchen.

MATERIALS: Polished chrome brass container. High luster finish... Metal valve mechanism... Stainless steel spring.

SPECIFICATIONS: Size—9.4" high x 4" diameter. Weight—2 lbs. 3½ oz. (including bracket). Capacity—1¼ qts. (liquid measure).

NAME PLATES: Individual name plates designed, furnished, and mounted. Quotations on request.

PACKING: Standard packing—1 unit to individual reshipper carton (weight 2 lbs. 9 oz.), repacked 1 doz. to shipping case.

(We do not sell soap powder)

FEDERAL TOOL CORP.
400 N. LEAVITT STREET, CHICAGO 12, ILL.



While the investigations of Hart and collaborators (36, 37) concern themselves primarily with the contamination of air in operating rooms they are also of general significance insofar as they refer to the occurrence in the air of S. aureus (hemolytic) of nasopharyngeal origin. The sedimentation of this virulent pathogen upon open wounds or sterile supplies as verified and followed by the observation of setting and culturing on open plates, has been held responsible for over 90 per cent of infections in supposedly clean operative wounds. While bactericidal ultra-violet irradiation of the contaminated air has been found effective as a remedial measure, no reference is made to any attempts of controlling recontamination of the air by the sedimented infected particles. By analogy with the conditions obtaining in the spread of streptococcal infection, it would seem fair to assume that the sedimented portion of staphylococci deserves at least the same attention as the suspended portion.

In connection with operating room procedure, brief reference should be made to the observations of Bourdillon and Colebrook (38) who accuse infected surgical dressings of releasing bacteria laden particles into the air and thus of contributing to the spread of infection.

The tubercle bacillus may be regarded as being the hardiest of the common respiratory pathogens. Its capacity of survival outside the human body under conditions which may be destructive to other pathogenic microorganisms points to the secondary reservoirs as being of particular importance in the spread of pulmonary tuberculosis. Indeed it has been known for some time, e.g., from the studies of Augustine (39) and from those of Neufelt (40) that individuals affected by open pulmonary tuberculosis produce an extensive contamination in their surroundings, among other things in floor dust and bed clothes, that tubercle bacilli can survive under such conditions for considerable periods of time, and that they

can be redispersed from them into the air. According to measurements carried out by Duguid (41) the bulk of droplets expelled by coughs (some of which may produce as many as 40,000 tubercle bacilli) are large enough to fall rapidly to the nearest surface. Therefore, it is fair to assume that the chief source of airborne tubercle bacilli is the secondary reservoir of floor dust and bed clothes, although transmission by contaminated hands cannot be disregarded as a possibility of lesser significance.

Influenza virus dried on fabrics or glass has been recovered a week or more following experimental contamination of such objects, according to Edwards (42). A high potency strain of influenza virus (Melbourne) such as may be assumed to occur in pandemic disease, when mixed with mucus and dried in air. may retain its lethal potency for embryonated eggs for as long as forty-five days. From this it is concluded that the transmission of epidemic and pandemic influenza through the agency of dust and dry fomites is a distinct possibility, not to be ignored in the practical control of these diseases (43).

(To be Concluded)

References

- Med. Res. Council, War Memo. No. 11, 1944.
- R. and Mackenzie, D. M.: Hare, Brit. Med. J. 1,865 (1946).
 Davis, C. N.: Proc. Roy. Soc. Ser. B.
- 133, 282 (1946). Eagleton, A. J.: J. Hyg. 18, 264
- (1919).
- Winslow, C. E. A. and Kligler, I. J.: Am. J. Pub. Health 2,663 (1912). Cruikshank, R.: J. Path. Bact. 41,

- Cruikshank, R.: J. Path. Bact. 41, 367 (1935).
 White, E.: Lancet 1, 941 (1936).
 Cruikshank, R. and Godber, G. E.: Lancet 1, 741 (1939).
 Cruikshank, R. and Muir, C.: Lancet 1, 1155 (1940).
 Allison, V. D.: Lancet 1, 1067 (1938).
 Vanden Ende, M., Lusk, B. and Edward, D. C. Lancet 2, 133 (1940).
 Thomas, J. C.: Lancet 1, 433 (1941).
 Thomas, J. C. and Van den Ende, M.: Brit. Med. J. 1, 953 (1941).
 Hare, R.: Canad. Publ. Health J. 31, 539 (1940); Lancet 1, 85 (1941).

- Hare, R.: Canad. Publ. Hearth 31, 539 (1940); Lancet 1, 85 (1941). Willits, R. E. and Hare, R.: Canal 470 (1941).
- Med. Assn. J. 45, 479 (1941).
- Buchbinder L., Solowey, M. Solotorovsky, M., and Phelps, E. B.: J. Bact. 42, 615 (1941).
- Buchbinder, L., Solotorovsky, M., Solowey, M. and Ruhl-Koupal.: J. Vact. 42, 631 (1941).
- Hamburger Jr., M.: J. Inf. Dis. 75, 58, 71 (1944).

- Hamburger Jr., M., Puck, T. T., Hamburger, V. G. and Johnson, M. A.: J. Inf. Dis. 75, 79 (1944). Hamburger Jr., M., Johnson-Green, M. and Hamburger, V. G.: J. Inf.
- Dis. 77, 68 (1945).
 Hamburger Jr., M. and Johnson-Green, M.: J. Inf. Dis. 79, 33 (1946).
 Gordon, J. E.: J. A. M. A. 98, 519 (1932)

- (1932).
 Coburn, A. F.: U. S. Naval Med. Res. Bull. 42, 325 (1943).
 Loosli, C. G., Lemon H. M., Wise, H. and Robertson, O. H.: J. Inf. Dis. 82, 59 (1948).
 Robertson, O. H., Hamburger Jr., M. Loosli, C. G., Puck, T. T., Lemon, H. M. and Wise, H.: J. A. M. A. 126, 993 (1944).
- 126, 993 (1944). Lemon, H., Loosli, C. G., and Hamburger Jr., M.: J. Inf. Dis. 82, 72
- Loosli, C. G., Lemon, H. M. Robertson, O. H. and Apfel, E.: Proc. Soc. Exp. Biol. Med. 53, 205 (1943).
 Horwood, M. P.: J. Bact. 21, 146
- 1931). Walker, W. G. and Hucker, G. J.:
- Visited Programs 1942, 1942, Wright, H. D., Shone, H. R. and Tucker, J. R.: J. Path. Bact. 52, 111
- (1941) Wright, H. D.: J. Path Bact. 52, 283
- (1941). Crosbie, W. E. and Wright, H. D. Lancet 2, 656 (1941). Stillman, E. G.: J. Exp. Med. 26, 513 (1917).
- Robertson, O. H.: Amer. Rev. Tubercul.
- Robertson, O. H.: Amer. Rev. Faberian. 55, 109 (1947).
 Hodges R. G. and McLeod, C. M.: Amer. J. Hyg. 44, 193 (1946).
 Hart, D.: Arch. Surg. 34, 874 (1937);
- 37, 521 (1938).
- Hart, D. and Schiebel, H. M.: Arch. Surg. 38, 788 (1939).
 Bourdillon, R. B., and Colebrook, L.: Lancet 1, 561 (1946).
- Augustine, A. E.: J. Prev. Med. 3, 121 (1939). Neufelt, F.: Amer. Rev. Tubercul. 15, 40.
- Duguid, J. P.: Brit. Med. J. 1, 265
- (1946).42. Edwards, D. G. Lancet 1, 241, 664
- Parker, E. Dunham, W. B. and Mac Neal, W. J.: J. Lab. Clin.

BIDS AND AWARDS

(From Page 63)

Camden, N. J., 66 cents; Twin City Shellac Co., Brooklyn, 80 cents; Penetone Co., Tenafly, N. J., 58.1 cents; J. A. Tumbler Labs., Baltimore, 68 cents; Davies-Young Soap Co., Dayton, O., \$1.05; Windsor Wax Co., Hoboken, N. J., 59.4 cents; Lasting Products Co., Baltimore, 99 cents: Ultra Chemical Works, Paterson, N. J., 78.8 cents; Angier Products, Cambridge, Mass., \$1.75; S. C. Johnson & Sons, Racine, Wis., \$1.44; Kem Products Corp., Brooklyn, 41 cents; Hamilton Paper Corp., Richmond, Va., 97 cents.



TAR ACID OILS

Any required tar acid percentage. Guaranteed coefficiency based on tar acid content. Crystal free at 0°C.

CRESYLIC ACID

99% minimum purity. Clean, uncontaminated odor. Boiling range and chemical compositions appropriate for all applications and required solubilities.

U. S. P. CRESOL

90% distills within range of 7°C. which betters Pharmacopea requirements.

KOPPERS COMPANY, INC. Pittsburgh 19, Pa.



More Sales

for You

Now that Peck's offer you EXP in this reusable galvanized water pail.



EXP the top quality hand dishwashing compound that is breaking all records adds another first to the list. The 25 lb. container is now a hand dipped galvanized pail of standard 12 qt. size. No increase over previous price.

Foamide automatic laundry compound is also available in this new container.

Write today for quotations.



Peck's PRODUCTS

610 E. CLARENCE AVE.

ST. LOUIS 15, MO.

Manufacturers of Household Specialties use



Magnesium Aluminum Silicate

Because it combines these properties:

Detergency Suspension

Dispersion Emulsion stability Odorless

White color

Samples and literature are available

R. T. VANDERBILT CO., INC. Specialties Dept. 230 PARK AVE., NEW YORK 17, N. Y.





5 Year Guaranteed

*Per-Mo Mothproof Liquid packed in Pints, Quarts, $\frac{1}{2}$ gal., gal. and 5 gal. containers or in Drums.

*Per-Mo Flameproof Liquid packed in Drums or gal. Containers.

*Per-Mo Rat & Mice Liquid packed in 8 oz. bottles or in Gals.

*Per-Mo Rat Bits made with RED SQUILL (Fortified) packed in 4 oz., 16 oz. and in Bulk.

*Per-Mo Rat Paste made with RED SOUILL (Fortified) packed in 4—8 and 16 oz. jars.

*Per-Mo Brown Rat Killer made with ANTU. Packed in 4-8 and 16 oz. jars.

ALL PER-MO PRODUCTS CAN BE PACKED UNDER YOUR PRIVATE LABEL.

PER-MO PRODUCTS CO.

3602-04-S Woodland, Kansas City 3, Mo.

WRITE TODAY. FULL PARTICULARS FIRST LETTER

OIL SOAPS

Potash Vegetable Oil Soaps Light Color — Good Odor Well Made

00000

LIQUID SOAPS

Mild - Clear - Bright Exceptionally well perfumed

00000

SCRUB SOAPS

Modern liquid cleaners. Pine or Sassafras Scrub Soaps - Prewax Cleaner - Concentrates

< 0000

PINE OIL DISINFECTANTS

Approved and Registered Formulas Also Bases for Pine Oil Disinfectants

00000

LIQUID FLOOR WAXES

Dependable for Stability, luster and long wear.

00000

Send for samples and price list



OIL-KRAFT

INCORPORATED

3330-3340 Beekman St. CINCINNATI 23, OHIO

... for the jobbing trade only



IRON HORSE **GALVANIZED WARE** A QUALITY LINE FOR THE JANITOR SUPPLY TRADE



Three popular sizes, 6, 8, and 11 gallon . . . Standard and Heavy g r a d e s . Corrugated and desired amouth side types. WRITE FOR BULLETINS No. 8 and No. 10.



-GARBAGE CANS NESTABLE TYPE

+-- WATER PAILS

Available in 12, 14 and 20 quart capacities — Medium. Heavy and Extra-Heavy grades. WRITE FOR BULLETIN No. 237.

Large sturdy cans in 20, 22, 24 and 32 gallon sizes. Standard, Heavy and Heavy Duty grades. WRITE FOR BULLETINS No. 22, No. 24, No. 32 and No. 42.



OILY WASTE CANS

UNDERWRITERS' LABORATORIES A P P R O V E D.
Foot and hand-operated
types. Full-bodied construction. positive gravity-closing
cover among many unusual
features. W R I T E F O R
BULLETIN No. 18.

Manufacturers of Wash Tubs. Rubbish Burners, Steel Baskets. Write for descriptive literature.

ROCHESTER CAN COMPANY Rochester 9, N. Y

Illinois PCO'S Meet

A dinner meeting of the newly formed Illinois Pest Control Association was held at the Maryland Hotel, Chicago, recently, and was attended by 47 members and guests. J. Everett Bussart, entomologist of Velsicol Corp., Chicago, spoke on "Chlordane Formulations and Uses." In addition, two films of the U. S. Public Health Service: "Defense against Invasion" and "Climbing Ability of the Norway Rat" were shown.

Black Dye for 1080

Nigrosine black, a dye concentrate that can be used with "Compound 1080," made by Monsanto Chemical Co., St. Louis, was announced by the firm during February. The use of the coloring material is a safety precaution aimed at making the rodenticide unattractive to human beings. The nigrosine black can be used with present stocks of 1080.

Nichols Joins Monsanto

William T. Nichols, formerly technical assistant to the executive vice-president of Westvaco Chemical Division, Food Machinery & Chemical Corp., New York, was recently appointed director of the general engineering department of Monsanto Chemical Co., St. Louis. A graduate of the University of Pittsburgh, he had been with Westvaco since 1930. Previously he had worked for four years on the research staff of Mellon Institute.

Geigy Names King

Charles A. King, Jr., was recently appointed as field entomologist in Texas for Geigy Co., New York. He has been extension entomologist for the State of Texas, with headquarters at College Station since leaving the army as a lieutenant colonel in 1945. Mr. King will make his headquarters in the company's Dallas office, which is managed by

E. L. Jarrett. A graduate of Texas A & M College, Mr. King served



CHARLES A. KING, JR.

as assistant county agent of Lubbock County and county agent in Starr County before the war.

Geigy also announce the establishment of a new processing plant in McGregor, Tex.

Mich. Food School Apr. 4-7

The sixth annual Dairy and Food Inspectors' and Sanitarians' School will be held at Michigan State College, Apr. 4-7. Full details on the School may be obtained by writing Dr. W. L. Mallmann, Department of Bacteriology and Public Health, Michigan State College, Lansing. Recent information on time and money saving in food inspection will be covered at the conference.

Canada Mothproofs Uniforms

The Canadian government is having the uniforms of all its armed forces mothproofed, it was learned recently. Canadian Commercial Corp., Ottawa, official government financing agency announced Feb. 22 that approximately 500,000 yards of khaki cloth, enough for 160,000 battle dress uniforms, are now being processed. "Boconize" mothproofing compound, made by Bocon Chemical Corp., New York, is being used.

Formation of American Boconize Corp., 17 E. 42nd St., New York, to market "Boconize" mothproofing compound to retailers was announced last month.

New Wax Sprayer

A new aerosol type dispenser for liquid waxes was introduced recently by Davies-Young Soap Co., Dayton, O. The new dispenser features a "trigger" type spraying unit or valve, which can be set for continuous spraying.

Roaches Poison Food

Laboratory tests have shown that cockroaches harbor a food poisoning germ, salmonella, it was reported at a milk and food sanitation symposium held during a meeting of the U.S. National Institute of Health in Washington, D. C., recently. Dr. Theodore A. Olson of the University of Minnesota school of public health made the report in a paper he delivered at the meeting. When roaches deposit their excreta on food or dishes the samonella will remain alive for a month or so, laboratories studies showed.

Two Join Cleary

Dr. Paul Sartoretto and Arthur Schwerdle recently joined W. A. Cleary Corp., New Brunswick, N. J., manufacturers of antiseptics, fungicides and herbicides. Both men are working as research specialists in the improvement of existing products and development of new ones. Dr. Sartoretto received his Phd. from the University of Notre Dame and following his graduation taught organic chemistry. Mr. Schwerdle attended Antioch College, becoming a research chemist at the United States Rubber Co. development laboratory. He later was a research and consulting chemist at the laboratories of Sowa Chemical Co., New York.

Edwin Gould Honored

Edwin Gould, entomologist in charge of the West Virginia University Experiment Station, Kearneysville, W. Va., was honored at a dinner Feb. 11 by the Virginia Horticultural Society.

1949



Years of experience plus technical knowledge have provided TRIO with the means to develop special formulas and solve your maintenance problems. Raw materials as well as finished products are laboratory tested and controlled.

Descriptive Literature and Price Quotations Furnished on Reques

O Chemical Works, Inc. 341 Scholes Street Brooklyn 6, N. Y.

341 Scholes Street

DEODORANTS

PRIVATE LABEL WORK . BULK QUANTITIES STANDARD PACKAGES . SPECIALTIES

Do you sell to SANITARY SUPPLY HOUSES?

If part of your market is among sanitary supply jobbers—firms supplying buildings, institutions, clubs, hotels, laundries, industrial organizations, etc., -then you can advertise in Soap & Sanitary Chemicals to considerable advantage. If you specialize in selling bulk or private brand soaps of any kind, disinfectants, insecticides, polishes, floor products, moth preventives, deodorants, etc., then Soap & Sanitary Chemicals is your advertising medium. Base soaps and other partly finished products can also be sold through this publication as well as all types of sanitary accessories-mops, brushes, metal receptacles, floor scrapers, mopping tanks, etc. Ask for an advertising rate card and the latest circulation data.

and Sanitary Chemicals

Heller Honors Employes

B. Heller & Co., Chicago, recently presented gold watches to 20 office and plant employes, who have been with the firm 25 years or more. Employes who completed 10 years with the firm received gold buttons in recognition of their service. Presentations were made by Preston B. Heller, president, and James R. Heller, vice-president.

Legislation Committee

The following members recently have been appointed to the legislative committee for 1949 by the National Association of Insecticide & Disinfectant Manufacturers, Inc., New York: chairman, Paul L. Robbins, Geo. B. Robbins Disinfecting Co., Cambridge, Mass.; C. L. Fardwell, McCormick & Co., Baltimore; H. W. Hamilton, H. W. Hamilton Co., New York; S. J. Hill, E. I. du Pont de Nemours & Co., Wilmington, Del.; G. S. Mc-Inerny, Boyle-Midway, Inc., New York; John A. Mueller, S. Pfeiffer Mfg. Co., St. Louis; L. J. Oppenheimer, West Disinfecting Co., Long Island City, N. Y.; Arthur Rasmussen, Furst-McNess, Inc., Freeport, Ill. and W. J. Zick, B. Heller & Co., Chicago. John D. Conner, N.A.I.D.M. counsel, works in conjunction with the legislative committee.

Offers Synergist Choice

John Powell & Co., New York, recently announced the availability of a choice of two synergists in the company's pyrethrum-base insecticide formulas. The firm is now offering in addition to its "Sesamin" synergist, "Piperonyl Butoxide," both of which are claimed to increase killing power. Choice of a synergist for a particular insecticide need provides certain advantages, according to the company.

Koppers Ups Holmes

R. R. Holmes, sales manager of the Tar Products Division of Koppers Co., Pittsburgh, since Oct., 1947, was recently appointed assistant general manager of the division. He has been with the



Above: Photograph taken of gathering of employees of B. Heller & Co., Chicago, when long service awards were presented.

company since 1923. Originally in the accounting department, in 1944, after serving as a clerk and a department manager, he was made manager of the Koppers White Tar Division at Kearny, N. J. He returned to Pittsburgh in Oct., 1947, to become sales manager of the Tar Products Division.

Insecticide Duties Off

Import duties on a number of insecticides were removed recently by the government of El Salvador, according to the U. S. Embassy there.

U.S.I. Names Hitchcock

Appointment of Orville Blake Hitchcock, former assistant state entomologist of Montana, as northwestern technical representative of U. S. Industrial Chemicals, I n c., N e w York, was announced late last month. Mr. Hitchcock's temporary headquarters will be in Bozeman, Mont. He is a graduate of Colorado A. & M. College and was awarded a master of science degree in entomology at Montana State College in 1939.

Plant Sanitation Booklet

Plant sanitation in the drug manufacturing industry is the subject of a "Good Housekeeping" booklet now being distributed to drug and pharmaceutical manufacturers by the American Drug Manufacturers Association, Washington, D. C. While avoiding detailed recommendations on sanitary practices the 14-page manual makes specific suggestions for dealing with contamination by insects, rodents, yeasts, molds, etc., and discusses such problems as cleanliness in packaging operations, lunchroom sanitation, health of personnel and other such matters. A bibliography of helpful publications is included. D. M. Copley of Norwich Pharmacal Co. headed the Association's task committee for the project, which was developed with cooperation from the Federal Food and Drug Administration.

Kiefer Reps. Move

Burnard C. York Packaging Machinery, Illinois, Wisconsin and Minnesota representatives for Karl Kiefer Machine Co., Cincinnati, recently moved to new and larger quarters at 5807 W. North Ave., Chicago 39.

New Drew Emulsifier

The development of "Napthole Polish Base N," an emulsifying agent for mineral oil, and a folder on the new product were announced last month by E. F. Drew & Co., Boonton, N. J. The new product, designed primarily for the production of liquid cream furniture polishes, can also be used in cases where mineral oil emulsions of stability and detergent action are desired. The function, physical properties, chemical nature and suggested applications are contained in the technical bulletin issued on "Base N."



Spread and Power

Effective pest control requires wide spread of insecticide and the driving power to force it into every crack and crevice—under mouldings, behind baseboards, around plumbing, between cases and bales.

Mistmaster Ball Bearing Fan Type Sprayers have both the speed and the power to do a quick, thorough job. Driven by 1/3, 3/5, 1 or 1-1/3 hp. motors, they spray insecticides for distances as far as 40 feet, penetrate into hard-to-reach places, and spray large areas quickly, completely.

Here is a sprayer that has more power than any other portable sprayer, yet is convenient and easy to handle. Equipped with 1-gallon non-corrosive tank, driven under low pressure with a high volume of air, it can be used with any type of insecticide, either oil base or water base, and carries insecticides into remote openings in full volume and power.

Used anywhere, it plugs into any electric outlet, and is supplied with three nozzles for fine, medium, or coarse spray. Can also be furnished with 2-gallon tank and special nozzles or in special design to meet individual requirements. Write today for further details and complete specifications, or mail the coupon.

SPRAYER CORPORATION OF AMERICA
1708 Payne Street, Evanston, Illinois

Send complete information on MISTMASTER
Ball Bearing Fan Type Electric Sprayers.

We are interested in details of your dealer franchise.

Name
Address
City Zone State



FEDERAL FLOOR FINISHES

A Quality Product for Every Surface

- MOP-VAR
- NO-BURN GYM FINISH
- . FED. CO. PENETRATING SEALER
- PENETROIL SEALER
- FED. CLEAN AND SEAL
- TERRAZZO SEALER
- TERRAZZO FINISH
- GYM FLOOR MARKING ENAMEL
- MASTIC ASPHALT TILE SEALER
- · VAR-LIN
- LIGHTNING LUSTRE
- 333 SELF POLISHING WAX
- DRI-FAST SEAL and FINISH
- NO-BURN VARNISH REMOVER
- READY-MIXED CON. COLORS
- O GYM FINISH CLEANER AND POLISH
- No. 70 RESTORER, CLEANER AND FINISH

CATALOG SHEETS AVAILABLE ON THESE PRODUCTS—Here's another FEDERAL FIRST! Now... we make available to you beautiful 8½ x 11 catalog sheets lithographed in two colors. You can promote all of these quality floor finishes under your own private brand names. Supply your salesmen with these powerful selling tools or use them as mailers... your sales will soer.

For More Information, Write-

FEDERAL VARNISH DIV.

Wis. PCO Course Mar. 29-31

A thorough study of nearly all phases of rodent and insect control will highlight the fourth annual, three-day course on pest control to be held at the University of Wisconsin, Madison, Mar. 29, 30 and 31. In addition to lectures and round-table discussions, there will be field demonstrations of subjects studied. A feature of the meeting will be the dinner and business meeting of the Wisconsin Pest Control Operators Association on the first night of the meeting. The first day will be devoted to a discussion of mammal and bird pest control. Insecticides will occupy the major share of the program on the second day, the evening of which will be given over to the annual banquet. Prof. R. C. Swanson will be the banquet speaker. On the final day of the meeting a field trip to the Livestock Pavilion has been scheduled. Pest control operators' mixing and packaging problems and

their solutions will be demonstrated, as will insecticide application equipment for interior work. A display of pest control operators' personal and manufacturer's new equipment will be shown.

Winthrop-Stearns, Inc., New York, recently announced that its new three million dollar research laboratory at Rensselaer, N. Y., will be completed and occupied this summer

Booklet on BHC

Commercial Solvents Corp., New York, recently issued a new booklet, "Benzene Hexachloride-Its Properties and Uses." Illustrated with tables and photographs, the booklet includes chemical, physical and insecticidal properties of benzene hexachloride, a description of grinding methods and formulations and insecticidal uses.

New-Winthrop-Stearns Lab.

Sees Good Sprayer Year

A strong demand for spraying and dusting equipment during the coming season was predicted recently by members of the National Sprayer and Duster Association at their first quarterly meeting of the year, held in Chicago.

Seidler Joins Analab

Albert D. Seidler, formerly connected with Ampion Corp., Long Island City, N. Y., recently joined Analab Laboratories, Inc., Boston, manufacturers of soaps, cleaners, sanitary specialties and pharmaceuticals. At one time, Mr. Seidler was with Clifton Chemical Co., New York.

Monsanto Advances Shumard

Roland S. Shumard was recently appointed coordinator of disinfectant and industrial preservative development for the organic chemicals division of Monsanto Chemical Co., St. Louis. In addition he will also direct the activities of the microbiological laboratory as part of his responsibilities. He has been with the firm since 1937.

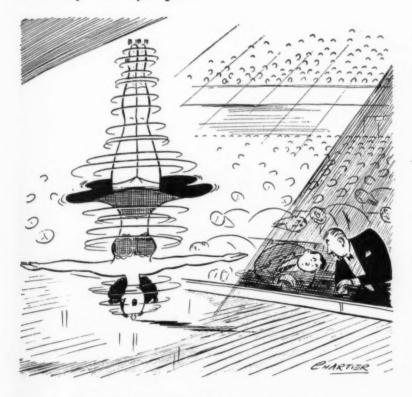
Breuer Vacuum Folder

Breuer Electric Manufacturing Co., Chicago, recently issued a four-page, two-color folder on its line of "Tornado" industrial vacuum cleaners. Complete descriptions and illustrations of the cleaners, including in-use photographs are included. A new model, the "Tornado" heavy duty cleaner is shown and described in detail in the folder.

Food Distributors Show

Food Distribution Exposition, the first national show to be devoted to all phases of the food distribution field, will be held at the St. Louis (Mo.) Auditorium, May 30-June 1, inclusive. The Exposition is sponsored by the United States Wholesale Grocers Association and will be held at the same time as the association's annual convention. Serving on the exhibitors' advisory committee is Bernard Weiser, general sales manager of McCormick & Co., Baltimore.

Selling Simplified.



"That's our new super deluxe 12% all carnauba, non-skid wax, Mr. Doublekraut!"

ATTENTION DEALERS

Waterless hand cleaners are not new! but . . .

"CLEAN-UP"

a waterless hand cream, that CAN also be WASHED OFF

IS DEFINITELY NEWS!

Compare these features

- 1. Can be completely rinsed off with water.
- 2. Leaves no offensive odors, no gumminess when rinsed.
- 3. Contains Lanolin.
- 4. Contains no caustic, no abrasive.
- 5. Safe for use on face and even hair.
- 6. Pleasant and clean after odor.
- 7. Will not remove nail polish.
- 8. Removes PAINT, TAR. GRIME, GREASE, SOOT, DIRT, INK, RUBBER.

Clean Up with "CLEAN-UP" waterless hand cleaner. Available for repackaging, jobbing or bulk consumption.

SUPERIOR CHEMICAL PRODUCTS, Inc.

47 North Second St.

Philadelphia 6, Pa.



hand jar and bottle filler

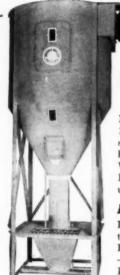
For the manufacturer who needs fast, accurate, spill-proof hand fillings. Flow of liquid or cream controlled by simple, hand-operated valve.

- Pint, quart, half-gallon, gallon sizes (Metal stands at extra cost for larger sizes)
- Available in tin, monel metal or stainless steel
- Easy operation
- Moderately priced

HAGERTY BROS. & CO.

8 PLATT STREET, NEW YORK 7, N. Y. Class containers since 1849

BROWER MIXER



For Fast, Easy
Blending of Dry
Soap Powders and
Cleansing Compounds

Mixes a perfect blend in 10 to 15 minutes. Easy to use . . . simply pour ingredients into hopper at bottom—the Brower Whirlwind Mixer does the rest. Economical . . . power cost is usually less than 5c per ton.

Five Sizes

Five sizes with mixing capacities from 700 to 4,000 pounds. Heavy welded-steel construction—built to give years of service. Designed to reduce dust. Many other outstanding features.

Over 7,000 Brower Whirlwind Mixers are in use today—in feed plants, soap and industrial factories. Fully guaranteed. Let us send you full details and prices

BROWER MFG. CO., 403 N. 3rd ST., QUINCY, ILLINOIS

PENNOWAX

Oxidized Petroleum Wax

Emulsions — Floor Polishes Carbon Paper — Protective Coatings M. P. 90-190 °F Acid Value 5-55

AMORWAX

Refined Petroleum Wax

Paste Polish — Shoe Polish Laminating — Impregnating Insulation

M.P. 100-195°F Pen. 2-25 Color Amber-White Refined Genuine Yellow Ozokerite Ceresines Paraffines

Write for

formulations, specifications, quotations, tech. data

PENNOTEX OIL CORPORATION

29 Broadway

New York 6, N. Y.

Koppers Has Explosion

An explosion originating in a partially filled, 2,000-gallon tank of liquid hydrogen cyanide occurred Feb. 15 at Koppers Coke Co., Kearny, N. J., fatally injuring one man and injuring another and destroying a similar tank of the material. The damage was estimated by company officials, at between \$5,000 and \$10,000. The explosion was the second since last May, when 10 people were killed at the Kearny plant. The cause of the blast in the outdoor tanks, which are 10 feet long and nine feet wide, was not immediately determined. The tanks are located in an area in which smoking is prohibited, and a refrigeration system was used to keep the chemical in a stable, safe condition. The plant was not in operation at the time of the explosion because changes in the processes used were under consideration. An experimental chemical plant was also damaged in the blast and the roof and corrugated iron walls of an adjacent chemical plant were ripped off.

Morone Joins MM&R

P. J. Morone, formerly a sales specialist in the manufacturing division of McKesson & Robbins, Inc., New York, was recently appointed to the staff of the export department of Magnus, Mabee & Reynard, Inc., New York. He will serve accounts in the greater New York area. A graduate of the Rutgers University College of Pharmacy, Mr. Morone is a registered pharmacist in New York and New Jersey. At one time he was connected for five years with E. R. Squibb and Sons, Brooklyn.

Coast Chemical Show

Leo R. Gardner of California Spray-Chemical Corp., Richmond, Calif., was named recently to the committee on programs for the industrial conferences to be held during the Pacific Chemical Exposition next fall and L. W. Van Doren of Oronite Chemical Co., San Francisco, will head the committee on information, it has been a n n o u n c e d by Dr. Richard Wistar, chairman of the California Section of the American

Chemical Society, which is sponsoring the show. General chairman of the affair will be James O. Clayton, research associate with the California Research Corp. Dates for the exposition are Nov. 1 to 5 at the San Francisco Civic Auditorium.

GLYCERINE DOWN 15c

On March 22, glycerine prices were cut 15c lb. by refiners, bringing the new basis for dynamite and 95% C.P. under 25c lb. in tanks and slightly higher in drums. Accumulated stocks and lower costs are reported as the reasons for the sharpest price cut recorded in thirty years.

Emulsol Builds Warehouse

Emulsol Corp., Chicago, recently broke ground for a new 21,000 square foot addition to the organic chemical plant at 1914 S. Kilbourn Ave., Chicago. The new extension will cost approximately \$150,000 and will be used as warehouse space and possibly later for additional manufacturing facilities.

Hear Patent Talk

Edmund C. Rogers of Rogers & Ezell, St. Louis patent attorneys, was the guest speaker at the Feb. 9, monthly luncheon of the Associated Drug and Chemical Industries of Missouri at the Hotel Sheraton. Mr. Rogers, an Examiner in the U. S. Patent Office, discussed the "Business Side of Patents."

Below: New all-steel maid's basket made by Ex-Cell Products, Chicago. The new item is 18 inches long, six inches deep and nine inches wide. To be sold only through jobbers and distributors, it has a rust resistant finish, three sections, and rubber bumpers to prevent scratches.



Perkins Joins Boconize

Gregory B. Perkins, formerly with R. H. Macy & Co., New York; L. Bamberger Co., Newark, N. J. and Conde Nast Publications, New York, recently joined American Boconize Corp., New York, as merchandise manager in charge of retail sales.

New Dust "Mop-Hood"

"Mop-Hood," a cloth cover that slips over the head of an ordinary dust mop, was introduced recently by Paul Jae Cutler Co., Minneapolis. The item is launderable and can be changed quickly. For dusting, the maker recommends a few drops of oil or polish on the hood before use. The item is packed in a colorful, cellophane topped envelope.

Zoeller Joins Schwab

E. Nelson Zoeller, for the past four years eastern district sales manager for France, Campbell and Darling, Inc., Kenilworth, N. J., recently joined Schwab Brothers Corp., New York, as sales manager. He is a graduate of Xavier University, Cincinnati, and has worked for many years in the paint, varnish, lacquer and related fields.

Diversey History Told

Diversey Corp., Chicago, is the subject of a recent article in the Chicago Daily News. The company began in 1923, according to the account, with the idea of making a chemical to disinfect dairy equipment, conceived by the late Walter A. Kochs, son of August Kochs, founder of Victor Chemical Works. The company was organized and given the name, "Diversey," from the name of the Chicago street on which the organizers' meeting took place. The new dairy disinfectant was named "Diversol." When bakers became interested, a pan washing compound for their use was brought out and since 1925 over 100 cleaning and disinfecting products and floor oil absorbents have been added to the company's line.

Starting with three employees, Diversey Corp. now has 300 office and laboratory workers and 300

949

Cachalot cetyl oleyl stearyl fatty alcohols

M. MICHEL AND COMPANY, INC.
90 BROAD STREET - NEW YORK 4, N.Y.

since 1926 hour consists to chamical manufacturers and distributors

Cachalot fatty alcohols are non-ionic, aliphatic, refined organic compounds with characteristics similar to other oils, fats and waxes. Cetyl, oleyl, and stearyl alcohols are used as absorption bases, adherents, emollients, emulsifiers, penetrants, plasticizers, softeners, solubilizers, stabilizers, thickeners, and intermediates. These C16 and C18 alcohols may be emulsified, sulfonated, or compounded with other materials in the manufacture of cosmetics, dyestuffs, germicides, inks, insecticides, oils, pharmaceuticals, soaps, textile and leather specialties, and many other products.

Write for new Cachalot booklet.

"SCIENTIFIC" portable VACUUM FILLER

Fills directly from drum, pail or demijohn; no overhead tanks required. Suitable for bench or tray work; also fills containers in original shipping cartons.



FOR perfumes to nail polish. meat sauces to silver polish.

FILLS vials to gallons; all cans including quarts. Our many years of "Know-How" at your disposal in making special filling handles for every shape of container, every type of liquid. Quick change-overs.

Cleans itself automatically in 5 minutes. OUTPUT about 50 to 150 gross daily.

ACTUALLY PAYS FOR ITSELF IN A FEW WEEKS!

SCIENTIFIC FILTER CO.

Mfrs. of Filters; Filling, Capping, Labeling Mchry.

2 FRANKLIN SQUARE NEW YORK CITY 7, N.Y.

THERE IS A

TO SOLVE YOUR PROBLEMS

Why Not

CHANNEL

Your Inquiries to

WAX DIV

DIAL WORTH 4-8383 H. W. KRAAZ

G. S. ZIEGLER & CO.

233 BROADWAY

NEW YORK 7, N. Y.

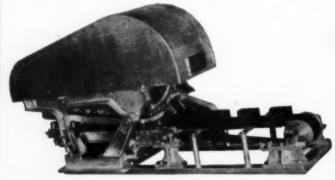
FOR

Amorphous Waxes
Ozokerites
Ceresines
Protective Coating Waxes
Laminating Waxes
Paraffins
Paraffin Extenders
Cable Insulation Waxes
Match Waxes



Micro-Crystalline Waxes
Oxidized Waxes
Carbon-Paper Waxes
Carnauba Waxes
Carnauba Extenders
Jap Wax Replacements
Beeswaxes
Montan Waxes
Zeco Processed Candelilla

Waxes to Meet Individual Specifications



Adjustable - Continuous

SOAP CUTTER

operated by the soap bar extruder

Send for descriptive literature

SHARP BROTHERS

(ESTABLISHED 1914)

201 Orient St., Bayonne, N. J.

engineer-salesmen. Its nationwide distribution system requires 110 warehouses. Original capital was \$10,000 and is now more than \$2,000,000, while sales, according to the article, run to eight figures annually. H. W. Kochs, a brother of Walter, is now chairman of the board.

Stokes & Smith Changes

nic

and

tion

ers,

tes.

OF

ics,

als,

cts.

Stokes & Smith Co., Philadelphia, recently announced that Carl E. Schaeffer has been appointed general sales manager and will have charge of both paper box and packaging machinery. G. F. Twist, formerly manager of the plant of Food Machinery and Chemical Corp., at New Haven, Ind., has been named division manager at Philadelphia.

At the same time, the company announced that Anderson-Barngrover Division, Food Machinery and Chemical Corp., San Jose 5, Calif., will handle Stokes and Smith paper box and packaging machinery sales and service for the Pacific Coast and Mountain States, formerly handled by Mailler Serles, Inc.

Join Emulsol Corp.

Miss Virginia M. Sversky and Miss Mary Mulvihill recently joined Emulsol Corp., Chicago, as control chemists. Miss Sversky is a 1948 graduate of Mundelein College, which Miss Mulvihill also attended.

Innis, Speiden Changes

Innis, Speiden & Co., New York, recently announced the appointment of E. T. Ladd, vice-president and works manager of the Isco Chemical Division, Niagara Falls, N. Y., as vice-president in charge of the division. C. H. Berle, assistant works manager, has been advanced to the position of works manager.

New Nopco Emulsifier

A new product, "Nopco 1219-A," for emulsifying or solubilizing chlordane was announced recently by Nopco Chemical Co., Harrison, N. J. The material can be used for the preparation of stable chlordane emulsions for agricultural sprays and for producing clean solu-



Among the 134 registrants at the ninth annual Eastern Pest Control Operators' Conference held recently at University of Massachusetts, Amherst.

tions of chlordane in water without solvent for exterminating use. A technical bulletin, "Nopco 1219-A," which gives physical properties and formulating techniques, is available on request.

Perfumers Elect Frascati

A. T. Frascati, formerly of Firmenich & Co., New York, was elected president of the American Society of Perfumers at the group's recent annual meeting at the Advertising Club, New York. Other officers elected included George J. Tombak, E. I. du Pont De Nemours & Co., vice-president; William H. Barlow of Orbis Products Corp., secretary and R. B. Houk, Dodge & Olcott, Inc., treasurer. Basil A. Pegushin of Schimmel & Co. and Waldo Reis of Van Ameringen-Haebler, Inc., were elected to the board. William H. Dunney, Sr. of Ungerer & Co., retiring president, was chosen as chairman of the board.

Dr. Herman Goodman, M.D., well known physician, surgeon and cosmetologist, spoke on "Guesses on Odor and Odor Perception" at the Feb. 16th meeting.

New Hooker Compound

Pilot plant production of bis (trifluoromethyl) benzene (xylene hexafluoride) is now under way at Hooker Electrochemical Co., Niagara Falls, N. Y., the company announced recently. The product is a mixture of para and meta isomers and has a specific gravity at 20°C of 1.395, a freezing range of -40° to 50°C, a distillation range of 113° to 117°C, and a flash point of 37°C. Technical Data Sheet No. 368, describing the product more fully, is available.

Purdue PCO Conference

Pest control problems, with special emphasis on termites, rats, fly control, new insecticides and appliances were discussed at the 13th annual Pest Control Operators Conference, held at Purdue University, Feb. 7-11. Nearly 275 persons registered for the course, which also dealt with food industry pest control problems. J. J. Davis, head of the Entomology Department at Purdue, was in charge of the conference.

Fundamentals of insect life were covered on the first day, which was followed on successive days by discussions of Ectoparasites and termites, fly control, and sanitation and rodent proofing, insecticides and food industry problems, and pest control operator equipment demonstrations.

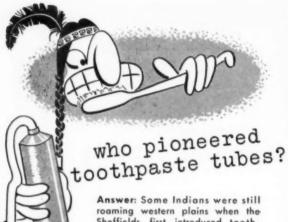
The banquet was held on the fourth evening of the conference.

Robt. Wotherspoon Married

Robert Wotherspoon of Orbis Products Co., New York, well known in the insecticide, perfume materials and allied industries, was married to Mrs. Florence DeYung Stulb on February 19th at Wynnewood, Penna. Mr. Wotherspoon is general manager of the Orbis plant at Newark, N. J. The couple will reside in New Jersey.

Bank Elects Tesco Head

T. E. Schneider, president of Tesco Chemicals, Inc., Atlanta, Ga., was recently elected a member of the board of directors of the Bank of Georgia, Atlanta.



Answer: Some Indians were still roaming western plains when the Sheffields first introduced tooth-paste tubes to the U.S. in 1892. Our long manufacturing experience assures you outstanding values in the Sheffield Process collapsible tubes of

today . . . values based on skill that gives you betterlooking, tougher, and consistently uniform tubes that are exactly right for your product.

Send today for free illustrated catalog.

THE SHEFFIELD TUBE CORP.

Home Office . . . New London, Conn.

SALES OFFICES

New York 18 . . . 500 Fifth Ave., Dept. S-1 Chicago 16 . . . 3132 Canal St., Dept. S-1 Los Angeles 38 . 7024 Melrose Ave., Dept. S-1

PRECISION MIXING requires PRECISION BUILT EQUIPMENT



MARION MIXERS

are built to give you mixes that are identically the same by chemical analysis. Many Soap and Chemical Companies are depending on MARION MIXERS for their accuracy.

Mixers — Bag Cleaning Equipment — Finishers

RAPIDS MACHINERY COMPANY MARION, IOWA





MIRVALE CHEMICAL
Mirfield Yorks Phone Mirfield 2157

Louis Holzapfel Dies

Louis Holzapfel, president and founder of the Sanco Products Co., Greenville, Ohio, died March 7 at the age of 81 in the Wayne Hospital in that city following a heart attack the previous day. He had been active head of the company which manufactures and distributes sanitary chemical specialties and janitor supplies since its founding in 1912. He was for some years a director of the Farmers National Bank of Greenville, an honorary member of the local Rotary Club, and at one time was city marshall for Greenville. His other interests included real estate holdings and the trucking business. He was born in Greenville, Ohio, in 1868. Three sons and a daughter survive him, Louis, Jr., Fred, Herbert, and Mrs. Ralph Lammers, the former Pauline Holzapfel, as well as thirteen grandchildren and five great grandchildren. Interment was in the family plot at the Greenville Cemetery.

Issues DDT Warning

A warning against the "indiscriminate use of DDT in treating cattle and for other uses around dairy farms was issued recently by the National Agricultural Chemicals Association, formerly the Agricultural Insecticide & Fungicide Association, now of Washington, D. C. Instances of where DDT may be used safely in farming operations were listed by the Association.

Naylor Joins Koppers

G. W. Naylor, formerly general manager of manufacturing for Sun Chemical Corp., New York, has been named manager of the development section of Koppers Co., Pittsburgh. A graduate of Cornell University, he had been with Sherwin-Williams Co. in various foreign and domestic capacities until World War II, during which he served with the Army Service Forces. He had been with Sun since 1945 and was responsible for production, research and engineering.

Southern PCO's Course

An all-day discussion of ectoparasites, half-day conferences

on termites, safety for the pest control operator, insect control and moth-proofing and briefer coverage of "1080," mice control, ant control and new pest control equipment were the highlights of the ninth Southern Pest Control Operators Conference, held at Louisiana State University, Jan. 27-29.

Professor O. W. Rosewall was chairman of the conference. The registration was 114.

Cattle Spraying Plan

The National Live Stock Loss Prevention Board, Kansas City, Mo., recently issued recommendations for spraying livestock as part of a report on "Suggestions for Utility Alley for Sorting, Holding, Spraying, Loading and Treating Livestock." The work was conducted under the supervision of Ray L. Cuff, regional manager of the Board.

NPCA Committees

The National Pest Control Association, Brooklyn, recently announced the appointment of 25 committees and sub-comittees within the organization to function during 1949.

F. R. Andrews Dies

Francis R. Andrews, 53, owner of Andrews Exterminating Co., Kansas City, Mo., died recently of a heart attack. He was one of the founders of the National Pest Control Association.

Eastern PCO Conference

A varied program covering such subjects as ectoparasites; a clinic on insecticides, their toxicity, formulation and equipment for application; and a forum on sanitation highlighted the ninth annual Eastern Pest Control Operators' Conference, held Jan. 31-Feb. 2, at the University of Massachusetts, Amherst. The number of registrations was 134.

President R. A. Van Meter of the University was guest speaker at the banquet. The conference program was directed by Dean D. P. Alexander, Professors A. I. Bourne, H. L. Sweetman, Drs. F. R. Shaw, Marion W. Smith, William B. Becker and J. F. Hanson and Gordon Field.

NSSA Sanitation Conference

The National Sanitary Supply Association, Chicago, announced recently that a three day course on sanitation and cleaning methods will be held at the Hotel Sherman, Chicago, Apr. 4-6. In making the announcement, Leo J. Kelly, executive vice-president of the NSSA stated that the course, which is to be known as the Institute of Sanitation and Modern Cleaning Methods, is being held for persons in charge of sanitation in factories, hotels, hospitals, department stores, eating places, office and other buildings.

The course will be based on the successful administration of progressive sanitation programs used in leading U. S. industries.

Topics to be covered during the course include: "What Happens When We Clean" which will deal with theories of detergency; "Efficient Floor Cleaning," in which methods and equipment will be discussed; "Efficient Wall Cleaning;" "Efficient Miscellaneous Cleaning," covering windows, furniture, files, etc.; "Insect and Rodent Control;" "Science of Disinfection;" "Plant Cafeteria Sanitation;" "Cost Control;" "Labor Saving;" "Supplies Saving," etc.

Leaders in the field of sanitation both in actual work and in research will be the lecturers at the conference. Persons participating in the courses will receive a printed, detailed outline of each course to be used both during and after the lectures. Films, field projects, articles on the subjects, and exhibits will be employed during the courses.

N. Y. NSSA Group Meets

S. W. Franklin, Lily-Tulip Cup Corp., New York, spoke at the Feb. 16th monthly dinner meeting of the New York group of the National Sanitary Supply Association, held at the Fifth Avenue Hotel. He discussed "What's Ahead for the Sanitary Supply Jobber During 1949." A short film, "Telephone Courtesy," was shown and accompanied by a short talk by B. A. Kollmer of the New York Telephone Co.

We invite your questions

THE Windsor QUESTION BOX

My customer has a drug store with a large luncheonette. The drug department is covered with linoleum, the luncheonette with asphalt tile. Have you a wax that can take care of both areas?

Use Windsor No. 131 WATER-EMULSION WAX. It can be dampmopped to take off surface dirt without affecting the lustre or wax protection.

"The Wax House" . Established 1923

WINDSOR WAX COMPANY, INC.

611-617 NEWARK ST. - HOBOKEN NEW JERSEY

Cortlandt 7-0868 - Hoboken 3-1700

CERTIFIED COLORS

A broad range of shades for Shampoos, Soaps, Drugs, Medicines, Creams, Rinses, and Cosmetics.

PYLA-SYNTH COLORS

Fast colors for the New Synthetic Detergents in Red, Blue, Green, Amber and Yellow.

- We offer a full line of fast colors for all soap and soap products.
- Send for free samples.
 Send for price lists.

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St.

New York City 14

Cable Address "Pylamco"



ANILINE OIL
CRESYLIC ACID
NAPHTHALENE
TAR ACID OIL
TRICRESYLPHOSPHATE
TRIPHENYLPHOSPHATE
XYLIDINE

COALTAR CHEMICALS CORPORATION

William D. Neuberg, President

GRAYBAR BLDG., 420 LEXINGTON AVE., NEW YORK 17, N.Y.
TELEPHONE: MURRAY HILL 5-9508
CABLE: "COALTABREM"



Specialized engineering and precision construction have only one purpose here . . . to give you exact control of spray pattern, distribution, and atomization . . . as well as impact where required, for any given liquid volume and pressure. For your requirements, you will find that Spraying Systems Spray Nozzles can always give you more in performance . . . to improve operations and lower cost. Catalog 22 gives

SPRAYING SYSTEMS CO.

Engineers and Manufacturers
3217 RANDOLPH ST., BELLWOOD, ILLINOIS
(Suburb of Chicago)



WRITE FOR CATALOG 22

Synthetic Pyrethrum

What is in effect the successful production of "synthetic pyrethrum" has been announced by the Bureau of Entomology & Plant Quarantine, USDA. In addition to pyrethrins, two other active principles of pyrethrum have been revealed by Bureau research directed by Dr. F. B. La-Forge, cinerin I and cinerin II. It is an isomer of cinerin I which actually has been synthesized and which shows insecticidal properties equal to the natural esters of pyrethrum flowers. The announcement from the Bureau, made by Dr. F. C. Bishopp, assistant chief, stated:

"The active principles of pyrethrum are known to be esters. It was not, however, until about two years ago that the detailed structures of these compounds were determined with certainty. These findings were the result of intensive studies on the chemistry of pyrethrum carried out by F. B. LaForge and his associates in the Division of Insecticide Investigations of this Bureau. Originally it was believed that pyrethrum contained two active principles, pyrethrin I and pyrethrin II. Studies by these investigators revealed the presence of two other active principles closely related to the pyrethrins. These have been designated cinerin I and cinerin II.

"Following the determination of the exact structure of the pyrethrins and the cinerins, LaForge and his associates undertook the synthesis of these and closely related compounds. Several months ago LaForge and Schechter succeeded in synthesizing the stereoisomer of the alcoholic component, cinerolone. When esterified with chrysanthemum monocarboxylic acid, the synthesis of which had previously been improved by chemists in England, this stereoisomer of cinerolone furnished an isomer of cinerin I which was as insecticidal as the natural ester to house flies and other insects.

Homologs of cinerin I have been prepared by LaForge, Schechter and Green. The synthesis of these esters was accomplished as follows: Pyruvaldehyde was condensed with salts of certain beta-keto acids, the resulting condensation products were cyclized to substituted cyclopentenolones which were esterified with chrysanthemum carboxylic acid. The compound with an allyl, instead of a butenyl side chain, prepared by these chemists and tested by W. A. Gersdorff at the Beltsville station of the Bureau, was found to be six times as toxic to house flies as the combined active principles of pyrethrum flowers."

State Insecticide Bills

Several bills covering insecticides, rodenticides and other related materials, introduced in various state legislatures recently include those of South Carolina (House Bill No. 1033); Utah (House Bill 90); Oklahoma (House Bill 79) and California (Assembly Bill 15, Senate Bill 221 and Assembly Bill 919).

The South Carolina bill provides for optional labeling, an annual registration fee of \$5 for each brand, with the proviso that any number of brands may be registered annually for a fee of \$1 each after payment of annual fees aggregating \$50. It does not provide for registration under protest. The bill follows the Uniform Economic Poisons Bill.

The Utah and Oklahoma bills follow the Uniform Economic Poisons Law. The former carries no optional labeling provision, but the Oklahoma bill has been revised to do so. The Utah bill provides for a \$5 per product registration fee, while the Oklahoma bill (79) has been revised from \$10 per product to \$10 for each of the first four products registered not to exceed 10 brands after payment of annual fees aggregating \$50.

California Assembly Bill 919 amends the California Agricultural Code by deleting the optional labeling provision. The proposed amendment would force manufacturers of household insecticides, etc., to disclose full formulas on labels, such as is the case in Oregon. Two other California bills: Assembly Bill 15 and Senate Bill 221, now under consideration, are identical, and would make it unlawful to use the ester form of 2, 4-D except as provided in the amendment.

N. Eng. Tube Changes Name

The name of New England Collapsible Tube Co., New London, Conn., was recently changed to Sheffield Tube Corp. In addition to manufacturing tubes the firm also manufactures tube cartons. Their laboratory and factory facilities offer a complete service to users—from the furnishing of formulae, to the filling, packing, and shipping of the finished product.

T. C. Sheffield, advertising manager and head of the West Coast office in Los Angeles, emphasized that the name change is a matter of aptness and convenience only. Company policies are not affected.

NSSA Plans "Caravan"

The National Sanitary Supply Association, Chicago, recently announced a "Training Caravan," which will travel around the U. S. to conduct three-day courses in sanitation for NSSA members and their customers. Details of the proposed "caravan" are being completed in time for the NSSA's 26th annual convention and trade show, to be held May 8 to 11, at the Hotel Sherman, Chicago.

Another NSSA project, a film on "The Care and Maintenance of Soft Floors," now in production will be shown at the convention, according to Leo J. Kelly, executive vice-president of the NSSA. The registration for the convention, all exhibit space for which has been sold out for some time, will be the largest in NSSA history judging by advance reservations. Although by holding the convention at the Hotel Sherman more floor space for exhibits is provided, some manufacturers had to be turned away because of insufficient space.

Members of the convention committee, which has been meeting frequently in recent weeks at NSSA headquarters in Chicago, include: Joseph H. Schwartz, United Sponge Co.; John B. Fitzpatrick, Drueding Brothers Co.; Leon Franklin, Franklin Metal Products Co.; J. H. Lawson Federal Varnish Co. and C. R. Lichtenberg, Chicago Sanitary Products Co.

1949

TRI SODIUM PHOSPHATE

CARBON TETRACHLORIDE

Now Available from Warehouse Stock

JOHN A. CHEW

INCORPORATED

60 E. 42nd St.

MU. 2-0993

NEW YORK CITY 17

Wm. Diehl & Co.

SHELLAC

Refined Bleached - Orange

CANDELILLA WAX

JAPAN WAX

CARNAUBA WAX and

High M. P. Substitutes

BEESWAX

Natural High Lustre Wax H. M. P.

336 W. 42nd St., New York 18, N.Y.

Phone: BRyant 9-5211



THE MARK OF QUALITY

CROSBY PINE OILS

CROSBY CHEMICALS offers for your selection four grades of Steam Distilled Pine Oil, XH, STANDARD, AMBER and SPECIAL, designed to meet practically all Specifications, Products and Processes that require a Steam Distilled Pine Oil.

TYPICAL ANALYSIS

Grade	Specific	Phenol
	Gravity	Coefficient*
XH	0.945	6.2
Standard		5.5
Amber		5.0
Special		3.7

*On a concentrate containing 80% Pine Oil (F.D.A. Method.)

CROSBY CHEMICALS, INC.

DE RIDDER, LOUISIANA

Tamms SILICA

Soft Amorphous Type

Grades to meet various abrasive requirements . . . for all kinds of metal polishes.

Tamms TRIPOLI

Rose and Cream Colors

Once-ground, double-ground and airfloat — ideal grades for buffing and polishing. Also rubbing compounds.

Preferred for POLISHES!

Tamms products are widely used in the polish trade, preferred for quality results. Write today for prices and samples.

Tamms MULTI-CEL

Diatomaceous Earth

Top grade, ground extremely fine. A milder abrasive than silica. Best for silver polish.

Tamms BENTONITE

(Suspension Medium)

Very finely-ground colloidal clay. Wholly soluble — absorbs 5 times its weight in water.

Dept. RM-3, TAMMS SILICA CO., 228 N. La Salle Street, Chicago 1

